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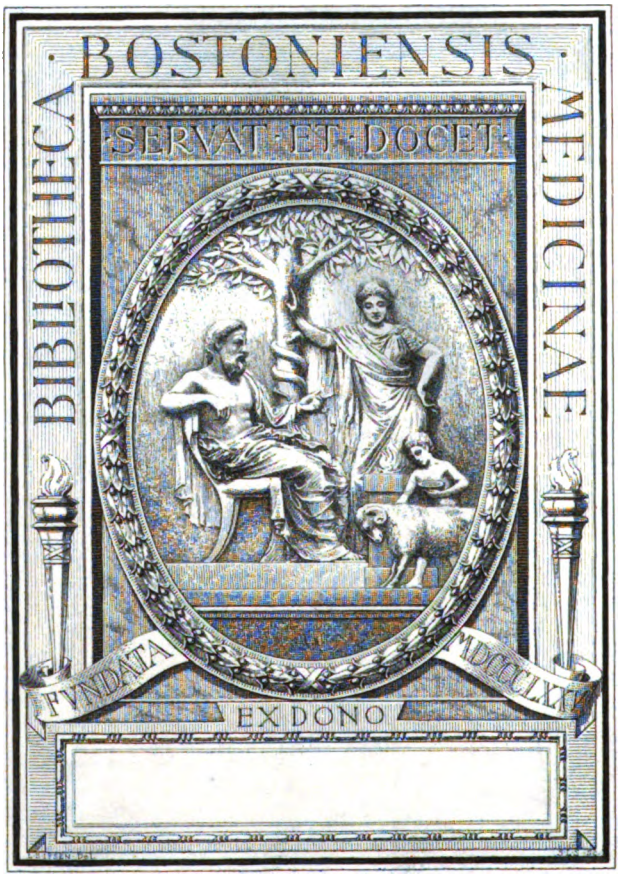

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THE MIDWIFE PROBLEM AND ITS LEGAL CONTROL.

By Guy Steele, M.D.,
Cambridge, Md.

WHEN I undertook the preparation of this paper I expected to call attention to the need of some practical and drastic legislation regulating the practice of midwifery, fortifying the conclusions reached by a recital of what other States had done in this respect. To my surprise, in searching the literature, I found that Maryland was but little, if at all, behind her sister States in ignoring this most important subject, and while this does not excuse our dereliction, it at least shows that we are not alone in our disregard of what I consider an important duty.

A Maryland statute of 1898 demands that midwives, or those attending labor cases for pay, shall register their names and addresses with the county health officers, and also provides that cases of childbed fever shall be at once reported to the health officer, and that no case of labor shall be attended thereafter until permission from the health officer has been obtained. For violations of either of these clauses penalties of fine and imprisonment are provided.

This surely is as little as could be done in the way of regulation or restriction, and yet one wonders how this much could have slipped into our medical laws and a complete ignoring of every other requirement remain. This small effort may do some good in letting the midwives know that their hurtful potentialities are recognized by our lawmakers, and that they are not altogether beyond the reach of the law, as they were for so many years. I have not heard that any attempt at enforcing any of the provisions of this law has ever been made. I hope that what I say may lead to some discussion of the question and lead to the introduction of some bill at our next legislative session correcting this most serious abuse. The almost complete absence of any systematic attempt to regulate the abuses of midwifery amounts to an indictment of our

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profession. The matter is fairly up to us. The question is, "What will we do with it?" for ignore it much longer we cannot.

In England bills have been presented to Parliament demanding evidence of some obstetrical knowledge obtained by attendance on a stated number of cases and tested by an examination covering the more practical requirements of anatomy, delivery, and attendance post-delivery. For years successive bills of this character were defeated, but recently a bill has passed. In the States of the German Empire, as might be expected, strict laws, rigidly enforced, surround and govern this profession. A regular course of hospital instruction, with difficult and exhaustive examinations, are provided. License is hard to obtain, highly prized, and jealously guarded. The same may be said of France. Just why so little has been done in this country is hard to say, and it is still more difficult to see why the little attempted has almost always been defeated. The readiest explanations are the lukewarm interest and half-hearted advocacy of our profession and the well-known antagonism of all lawmaking bodies to anything offered or supported by the medical profession. Almost any legislation proposing anything and demanding anything can be safely piloted through our legislative chambers by an actively-interested industry or clique, but let a bill be offered by our profession, no matter how beneficent to the general public, no matter how free from every possibility of material profit to anyone, and instantly the solons see a snake in it, and fight it either to death or at least to impotence.

Objection in times past has been raised that we will be legislating fees out of our own pockets and raising a formidable opposition to ourselves in one of the most profitable branches of our calling. This is not the case, for the reason that the more we educate the public to the value of skill and science in attendance on childbirth the more surely will the public demand the best that science and experience can offer, and no matter how well we train them we can hardly expect to see the day when midwives can meet us on equal ground. No matter, though, if some of us do lose fees, this is no reason why we should not do our duty, and by the majority of the profession at large the pecuniary argument will not be considered. It has been the glory of medicine that every advance in scientific discovery, every step forward in the treatment of disease, every improvement in surgical technique, has been made solely with the purpose of better serving and better helping our fellowman. The whole story of our sacrifice of self-interest is summed up in the words preventive medicine. Every tuberculosis commission, every board for the establishment of water-works, every health board, every health officer is the enemy of commercialism, and we have ever been foremost in every enterprise that promised improvement in health conditions or prolongation of human life.

Why, then, do we allow this midwife problem to remain unsolved, and why, in the time of their greatest need, should we leave mothers and infants to the tender mercies of ignorance and superstition so gross in many cases as to rival voodooism?

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This last assertion may not appeal to our city brethren with all the force that it does to those who practice in the counties and are in daily contact with the negro race. That physicians practicing in the poorer districts of the cities have their occasional trials I am well aware, but I speak only fairly when I say that the midwife problem, as a problem, is always before the country doctor. The city man is in reach of trained assistance. The nurses' homes and clubs, and medical institutions can at all times be drawn upon, provided the patient can pay. With the country doctor the question is different. No matter how anxiously he wants an obstetrical nurse, no matter about the pay, he is in most cases, and especially in cases to which he is called hastily, unable to obtain any better assistant than a local midwife. Imagine the feelings of a man who faces a difficult case in the country without a consultant, interference with natural delivery being imperative, an anesthetic to be given, and the only assistant a negro midwife. Delivery is in most cases accomplish safely; careful instructions are given covering all contingencies likely to arise, and the case is left to the mercies and intelligence of the nurse.

The post-partum period gives unending anxiety. He is 10 miles away, and can only see his patient once a day, perhaps once in two days. What attention is paid in his absence to the rules he has given about cleanliness of the patient's person, midwife's hands and dressings, about the breasts, the diet, the baby's eyes, mouth, and cord? In more than half of the cases no attention is paid to anything but the effort to get through every duty with as little physical exertion and as little expenditure of time as possible. When the physician's back is turned the reign of the midwife begins. This product of 40 years' experience was delivering women long before the doctor was born, and her cases got along without such foolishness as the washing of hands at any time during delivery or after delivery.

From recent personal experience I may say that the good soul is still plying her art who, a few months ago, grabbed her hat and coat and left the house in a fit of indignation because I reprimanded her for taking advantage of my momentary absence from the room to rupture the membranes. She told me that she had learned her business at the Johns Hopkins, and knew "as much as any doctor, and a great deal more than some." Another, recently gathered to her fathers, when I attempted to explain in a commencing labor the necessity for sterilizing her hands, informed me in a most injured tone that her hands were perfectly clean, "as she had been in the washtub all the morning." This was at 6 P. M., and when I returned to the house later in answer to an urgent call I found her rocking calmly by the window, crooning to herself while dressing the baby which had been born during my absence. An examination of the mother revealed the placenta lying partly

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in the vagina, the uterus extending nearly six inches above the umbilicus, immensely enlarged in all diameters, soft and boggy; a pulse almost imperceptible, lips blue, and face blanched. A little more delay and a fatal result would have been inevitable.

There is another midwife still with us who for 50 years has been "waiting on only the best ladies of the town." Her specialty is the baby's scalp, and her first inquiry is whether there is any whiskey for the baby's head. If there is, several ounces invariably go to enliven her melancholy soul, while drops find their way to the baby's scalp. Under her skillful management I had one of the most trying experiences of my obstetric practice. Having safely delivered a primipara after a long and trying labor, I had every reason to expect a speedy and uninterrupted recovery. As some blood clots were passing, I had ordered a vaginal douche in the morning and cleansing of patient with soap and water whenever pads were changed. To avoid the trouble of giving the douche my nurse suddenly developed a case of rheumatism in her shoulder so painful that she could not lift the douche bag to a nail above the bed. Supposing that she had at least performed the perineal toilet, I had not made examination at my next visit, as I was informed that the lochial discharge was normal in color and odor. One morning I found a temperature of 102° F. and pain in urinating, and on a vaginal examination an almost indescribable condition was found. I was then told by the patient that the only attention that she had received was a slight dab of water each morning, and that the nurse had assured her that she was doing well and that my instructions were being faithfully carried out. A cystitis resulted, infection passed up the ureter to the kidneys, and for months I struggled with a pyonephosis. Good-natured, fat, asthmatic, black Aunt "Lonzy" still offers her services to the "best ladies in the town." When in need of a perineal pad or napkin she delves in a dark corner or dusty cupboard and fishes out an old calico skirt or petticoat, which, being good for nothing else, is just suitable for such use. A short time ago I saw one of her cases with a temperature of 105° F. and a discharge with terrific odor. I was informed that her experience had demonstrated, and she had always been taught, that the bloody nightdress, blood-soaked bedding, and the originally-used napkin must not be changed, nor must the patient be bathed for three days following delivery.

I might go on indefinitely, but these illustrations, familiar to those who practice in the country, are enough to show the dangerous capabilities of the average midwife in the rural districts. It is a satisfaction to know that people are becoming better educated and that both doctors and midwives are held to stricter accountabil-

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ity. The day when a doctor prescribed a fried toad for jaundice, and the people took it in all faith and gratitude, is gone or fast going, and the same may soon be said of the autocratic sway of the midwife.

The former requirements for a midwife were an age of 50 years or more, a laziness that scorned regular occupation, a disregard of pain and suffering, and ability to stand the sight of blood.

In these days midwives are expected to know something of obstetrics, or, at least, to know their own limitations and enough to call medical assistance when danger threatens in delivery or post-partum. This much would be a great gain, and in this even partial enlightenment of the people we might see some hope of solving the midwife problem.

The question before the profession is, What can we do and what can the State do to correct the present abuse? We, ourselves, can do much to help educate those we have now with us. It is my custom in all cases to explain to my nurses the necessity for and the process of hand sterilization, the methods of cleansing the vulva and perineum, the preparation of bed and dressings, the plainer features of presentation, descent, and delivery. I instruct them as to the signs of hemorrhage and the significance of uterine expansion and bogginess, how to knead the uterus and keep it contracted. Plain rules for diet and infant-feeding are given, and for the care of the baby's eyes and cord. It is needless to say that the instructions given are suited to the intelligence of the nurse. While it is frankly confessed that much of the seed falls on barren ground, the point is that something may always be taught, and that it pays to do it, especially as the instructions are given while the case progresses, and no time is lost.

What now of legislative enactment? It will be difficult to pass a suitable measure for two reasons. In the first place, such a bill, in order to pass, must be absolutely devoid of any suspicion of gain to our profession. In the second place, it will be hard to frame a bill that will improve the situation and still be so simple and practical that its requirements can be met by the class of women who will present themselves as candidates for license. This is the crucial point. If the future midwives were to be drawn from an even fairly-educated class, the problem would present few of its present difficulties.

We all know, however, that for the present and for some time to come our source of supply must be the negro women. We rarely find a young midwife. My experience is that not one in ten is under 50, and few of this race over 50 are capable of any training that requires more than a rudimentary education. We must be content with an humble beginning, and as the people learn to ap-

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preciate the value of legal supervision the requirements for license should be increased. I am convinced that if we make a start the problem will work itself out. We should begin by enforcing the existing law requiring registration of midwives and those who attend cases of labor for pay. Let the few who refuse to come forward be fined, and all who intend to follow the profession will flock to the clerk's office or else go out of business. I know this to be so, for many former midwives have given up their business rather than go to the small trouble of making monthly returns of births. We should be able to fix a day, say a year later than the act of assembly, after which all who propose to begin the practice of midwifery must obtain license by passing an examination. This examination should be plain and practical, embracing only the knowledge which is practically indispensable. The details should, as is now the case with medical examinations, be left to a board of examiners. The enforcement of the law should be placed in the hands of the executive officer of the State Board of Health. Violations of the law would first come under the notice of the county health officer, and it should be his duty to report the facts to the secretary of the State Board. As possible candidates are in most cases unable to go to the medical centers to attend lectures, the lectures must be brought to them. A combined board of lecturers and examiners should be appointed, say one man for each of three counties for the State at large and a suitable number for Baltimore city, who should meet and formulate a set of examination questions for the whole State. The lectures should be so arranged as to cover the questions for next examination. Each lecturer and examiner should twice a year visit the county-seats of the counties under his charge. Just before each series of lectures an examination should be held covering the ground gone over in the preceding course of lectures. A certificate of proficiency should be given to those who pass, stating that they have attended one course of lectures and are now entitled to attend cases of labor (but not for pay) under the supervision of some physician. The last course of lectures should cover the practical side of obstetrics, and the final examinations should test the ability of the candidate to manage cases of normal labor on her own responsibility.

It is evident that this is a mere summary. The details must be worked out in part by those who are able to draw up a proper bill and in part by those who are entrusted with its enforcement. As I said in beginning, my hope is to arouse sufficient interest to bring about an effort to solve the question. The cry for relief has long gone forth. Can we not answer it at the next session?

WHEN you fret and fume at the petty ills of life, remember that the wheels which go round without creaking last the longest.

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FOUR GREAT ANGLO-AMERICAN MEDICAL DISCOVERIES.

By William Royal Stokes, M.D.,

Professor of Pathology.

INTRODUCTORY ADDRESS BEFORE THE FACULTY AND STUDENTS OF THE COLLEGE OF PHYSICIANS AND SURGEONS, BALTIMORE.

WHEN I first began to consider the subject of this address I was seized by an almost irresistible temptation to trace for you the development of medicine from its beginning to its brilliant present. Is there anything more striking than the contrast between the medicine of the twentieth century and that of the many centuries preceding it? But I must turn my back on this tempting opportunity in deference to my twentieth-century audience.

But strive as I may to ignore the years that are long passed, I cannot entirely avoid them. I must therefore ask you to forget for the present such things as railroads, telephones, printed books, presidential elections, and other similar privileges of civilization, and to transport yourselves in fancy to the island of Cos in the Grecian archipelago, and to the year 460 B. C., when Hippocrates, the greatest of ancient physicians, was born. Hippocrates produced upon medicine an influence which is felt today.

Living successively in Greece, Asia Minor, and Egypt, he both wrote and collected a series of writings which contain many facts still useful in our present medical practice. Passing over his various pathological views concerning the origin of all diseases in the irregular action of the four cardinal fluids—yellow bile, black bile, mucus, and blood—we cannot help but admire his accurate observations in dietetics, the symptoms of disease, diagnosis, and prognosis. His therapeutic skill was remarkable for the period in which he lived, and his knowledge of surgery embraced the proper methods of recognizing and treating fractures and dislocations, hernia, and tumors. He also practiced such operations as trephining, paracentesis, and amputation for gangrene. Many important medical facts were thus known even at this early date, and one could spend much profitable time in studying the lives and writings of the many ancient teachers who developed, handed down, and at times perverted the teachings of Hippocrates. But although we must omit these men from our present consideration, we dare not offend the shade of Aristotle, the teacher of Alexander the Great. We find this great naturalist in Alexandria, about 350 B. C., making profound researches in comparative anatomy and discovering the origin of the nerves from the brain, the optic nerve, the aorta, the ureter, and the pulsation of the heart in the embryo of animals.

I shall only mention one more name of ancient times, that of Galen, the Roman physician, who flourished in the second century A. D. Galen studied anatomy at Alexandria, and then went to Rome and practiced as physician to the great moralist, the Emperor Marcus Aurelius. He defended and enlarged upon the writings

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of Hippocrates, and was an author of immense and versatile fertility. Besides writing 98 books on medicine, he published many other volumes on law, grammar, mathematics, and rhetoric. His writings were 389 in all, but he received little or no money for his books. He was paid 75 cents for his book of epigrams, and I suppose in order to make any money on them he had to write 388 more.

Galen added no advanced ideas to the crude pathology of his day, but he practically founded experimental physiology by cutting the fifth cervical nerve and thus destroying the motion of the supraspinatus and infraspinatus muscles. He described many of the cranial nerves, located the perception of light in the retina, and his anatomical works contained many correct observations, and lasted as text-books to the sixteenth century. His contributions to surgery and therapeutics again rescued medicine from the grasp of superstition and quackery.

It would certainly be a most pleasant task to linger at this point in our journey in order to investigate the curious mysticism of the medicine of the Middle Ages. The entire universe was said to be filled with demons, and these disagreeable creatures could be managed only by prayers, offerings, exorcisms, and the laying on of hands. All of these measures were employed to cure diseases. The attempts of alchemists to produce gold from baser metals, although, of course, unsuccessful, laid the foundations of chemistry. These interesting things are mentioned in order to prepare for a flying leap through many centuries, passing in our flight the Arabian universities, such as those at Bagdad and Damascus, and the Moorish universities of Toledo and Granada, which preserved the traditions of real medicine during the Middle Ages. We can only mention the great Arabian teacher Rhazes of Bagdad, whose famous account of smallpox was the first correct description of this disease in medicine. We must also hurry on past the many important discoveries in medicine, surgery, physiology, pathology, anatomy, and treatment during the fifteenth and sixteenth ceuturies, and only briefly refer to the epoch-making observation of the circulation of the blood made by William Harvey and published in 1628. Of course, you all must know that until this time the simplest facts in the study of pathology were not understood. Even inflammation, with the migration of the white-blood corpuscles into the tissues, could never have been observed until the circulation of the blood was admitted.

It is most pathetic to observe how Harvey suffered on account of his discovery. Although physician extraordinary to James I and a man with a busy practice, he lost both position and practice when he announced his belief that the blood circulated through the arteries and veins, and regarded by many as a demented old man, he was allowed to end his days peacefully at Oxford. No one in England would publish his book, and it was brought out in Germany. Is it not fortunate that the pleasure obtained in the pursuit of scientific truths made it easier for him to stand the opposition of humanity?

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It seems to me that the early growth and development of medicine down to the middle of the nineteenth century simply prepared the way for more important discoveries. While many observations were made, it cannot be claimed that they were of very great direct practical benefit to mankind, and in this particular they differ from our four great Anglo-American medical discoveries. Every one of these has alleviated the sufferings and pain of untold thousands, and will continue to relieve unborn millions of human beings.

The vale of Gloucestershire, I am told, is one of the most beautiful portions of England. Here, in the vicarage at Berkeley, Edward Jenner was born on May 17, 1749. At the age of 21 he went to London and studied under the famous John Hunter. The two men became firm friends, and it was certainly partially due to the careful training in scientific observation which he received from Hunter that his mind was prepared to receive and use the facts which led to his great discovery. After receiving his medical education he insisted upon returning to Gloucestershire, although he received many tempting offers to remain in London.

It is pleasing to learn from Dr. Baron, his faithful biographer, that Edward Jenner was a man of many attainments. He was very fond of the beautiful scenery which surrounded him, and although possessed of a busy practice, he found time for the study of natural history. He made interesting observations on the various fossils found in the rich geological strata of his neighborhood, and collected an extensive paleontological museum. He assisted John Hunter in his celebrated experiments on the hedgehog, showing how the temperature dropped from 97° F. in the summer to 48° F. in winter during hibernation. As a naturalist he explained in true Darwinian style the curious habit of the cuckoo in laying her eggs in the sparrow's nest to hatch, by showing that this bird does not remain in England long enough to both lay eggs and incubate them. The species must therefore be preserved by other birds. He also added much to the knowledge of the migration of birds.

He was said to be a charming companion, and was somewhat of a poet. He also wrote songs and set them to music, and, either with the violin or flute, he took part in many musical parties in his neighborhood. He detested cards and all games of chance.

If vaccination had not overshadowed all of his other work, Jenner would still have remained well known in medicine. His observations concerning the relation between sclerosis of the coronary arteries and angina pectoris, and between rheumatic endocarditis and chronic heart disease, were classical, but we forget, perhaps unjustly, all these things when we consider the discovery of vaccination.

We can almost trace the steps which led to this discovery—his refusal of offered honors in London, his training under Hunter, his residence in the only portion of England where cowpox was endemic, and his instinct as a naturalist.

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Before Jenner completed the study of medicine the folklore of his county concerning cowpox was impressed upon his mind by a young country girl, who assured him that she could never take smallpox, as she had already had cowpox. This fact haunted him, and for years before his discovery he mentioned it time and again to many of his associates, including John Hunter. Having observed the immunity against smallpox enjoyed by milkers who had contracted cowpox from cattle, he determined upon a bold experiment. In November, 1789, he inoculated his two-year-old son with swinepox matter, and produced a few vaccinia pustules. Later he inoculated the child many times with smallpox pus, but the disease never developed. It must have required firm courage and faith to insert this virus into his first-born.

Later, on May 14, 1796, he was able to prove that cowpox could be transmitted from one person to another, thus producing artificial immunity against smallpox. Pus from the hand of Sarah Nelmes, infected by milking cattle, was inserted into the arm of James Phipps, who later developed a typical vaccinia pustule. Jenner then introduced the pus from a smallpox pustule into the tissues of this boy, but smallpox did not develop. This classical experiment was followed by a series of inoculations by which the virus was transferred from children successfully inoculated with cowpox or vaccinia to other children who had never suffered from either cowpox or smallpox. All of these children developed successful vaccinations. They were then all inoculated with pus from smallpox cases, but not one of them developed smallpox. Thus, to continue in his own words, "they (the experiments) proved that the matter in passing from one human subject to another, through five gradations, lost none of its original properties."

These, together with other observations which we cannot consider at this time, he published in June, 1798, under the title of "An Inquiry Into the Causes and Effects of the Variola-Vaccinae, a Disease Discovered in Some of the Western Counties of England, Particularly Gloucestershire, and Known by the Name of the Cowpox."

The publication of an alleged preventive for smallpox caused much popular discussion. A few broadminded men at once took up the suggestion and soon confirmed Jenner's observation. The practice of vaccination spread through the civilized world, and Jenner received hundreds of commendatory letters from France, Spain, Austria, Italy, Turkey, India, Arabia, Denmark, Sweden, Russia, and America.

The importance of this discovery was first recognized in America in March, 1799, when Dr. Waterhouse, professor of the theory and practice of physic in the University of Cambridge, now Harvard University, Massachusetts, introduced the practice of vaccination in the New World. President John Adams took great interest in the discovery, and later Thomas Jefferson had all of his family vaccinated.

You who are now present may observe an interesting bit of

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local history on your way to lectures in the morning. If you will stop for a moment and look at the old house on the southwest corner of St. Paul and Pleasant streets you will see where Dr. James Smith, the father of vaccination in Maryland, began the use of vaccine obtained from England in May, 1801, soon after it reached New England. He established a vaccine institute in Baltimore, and after vaccinating all of his family, he inoculated them with smallpox pus at the bedside of a patient. None of them developed smallpox, and this striking demonstration greatly helped the cause of vaccination in this country.

His tremendous correspondence and the frequent visits to London had caused Jenner to lose most of his practice, and his friends proposed a grant of money from Parliament. After some haggling they obtained a grant of £10,000. He had spent £6000 on his experiments and about £1000 on postage and incidentals, although he did not mention the latter item when called before the parliamentary committee. They did not pay this money to him for two years, and when he received it he found that £1000 had been extracted from the grant as fees. Shade of Aesculapius! Two thousand pounds for the discovery of vaccination!

Jenner also received another rebuff at the hands of his fellow-countrymen. Some of his friends thought that he should become a member of the Royal College of Physicians, but the voice of pompous authority at that time decided that he must take the regular examination and apply for membership. His celebrated reply was as follows:

"In my youth I * * * obtained a tolerable proficiency in the Latin language, and got a decent smattering of the Greek. * * * At my time of life to set about brushing up would be irksome to me beyond measure. I would not do it for a diadem. That, indeed, would be a bauble. I would not do it for John Hunter's museum."

It is more pleasant to turn to the bright pages in his life-history and learn of the many honors showered upon him by most of the learned societies in Europe and America. Among the most important were the medical diploma from Oxford, the appointment as foreign associate of the Medical Society of Paris, and the fellowship of the American Society of Arts and Sciences. This last diploma was signed by President John Adams. He was also appointed physician extraordinary to the King, and in all he received 47 honorary degrees. An amusing incident occurred when they conferred upon him the "*Freedom* of the City of Dublin." The notice was accompanied by a bill for £10. This was rather expensive freedom.

It is hard in these days to fully appreciate the great benefits of vaccination, but let us remember that in Jenner's day one out of every 14 human beings died of smallpox. In 1890 only 38 persons died of smallpox in the registration area of this country, mak-

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ing a rate of about one death from smallpox to every 1,000,000 of inhabitants.

Although the discovery of vaccination has practically relieved mankind of one of the most dreaded of all scourges, yet we have Jenner to thank for another great gift to humanity. His observations first taught men to think of the great principles of protective inoculation and immunity, and the wonderful discoveries of our day have proceeded from this beginning.

The next great medical discovery which we shall briefly consider was made by the late Dr. Walter Reed, a surgeon in the United States army. You are all aware of his observation that yellow fever is conveyed from one person to another by a special variety of the mosquito.

Walter Reed was born in Gloucester county, Virginia, in 1857, and after studying medicine at the University of Virginia and Bellevue Hospital Medical College, he entered the army as a surgeon. In 1892 he made some brilliant studies at the pathological laboratory of the Johns Hopkins Hospital. He was the first to describe the important focal necroses in the liver in typhoid fever, which observation directed the attention of other pathologists to these important lesions in other diseases. Doubtless while working here on the livers of typhoid-fever cases he first caught his inspiration for his very famous work on the means of spreading yellow fever.

When the United States army occupied Cuba, Dr. Reed and his assistants, Drs. Lazear and Carroll, all of whom were known personally by many of us here in Baltimore, were detailed to carry on experiments in Cuba for the purpose of determining the cause of yellow fever. They carried on their work at Quemados, Cuba, and in order to make a series of comparative experiments they erected two buildings.

Building No. 1, called the "Infected-Clothing Building," was tightly built, and was carefully protected against mosquitoes by screens. Three large boxes of pillows, pillowslips, and blankets from yellow-fever patients were distributed through the building. Seven young Americans lived in this building for two months, and even wore the pajamas, undershirts and nightshirts, and slept on the mattresses with the blankets and sheets all from yellow-fever cases. Yet not one of these men developed yellow fever, and these experiments effectually disposed of the hazy idea that yellow fever was caused by the fomites or exhalations from infected clothing.

Dr. Reed and his associates now became convinced that yellow fever was conveyed by other means, and as they already suspected the mosquito, they proceeded to erect Building No. 2, or the "Infected-Mosquito Building." No infected clothing was allowed in this building, all clothing and bedding being disinfected by steam.

Thirteen young American soldiers volunteered for these perilous experiments in this building, allowing themselves to be bitten again and again by infected mosquitoes from yellow-fever patients.

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Ten out of the thirteen developed yellow fever, and Dr. Lazear died from this disease. It takes a courageous man to risk his life in battle, but no soldier ever met a braver end than Jesse William Lazear, dying of yellow fever in his tent at Columbia Barracks in Cuba.

The value of this important discovery can be estimated from a commercial and a humanitarian standpoint. Let us first consider its commercial aspect. Yellow fever was first observed in this country in 1693, and since that time it has invaded the United States 95 times. We have no means of discovering the total cash value of these 95 epidemics, but the great epidemic of 1878 cost this country $100,000,000.

The "Yellow Jack" has also slain its millions, and from 1853 to 1900 in Havana yellow fever killed 35,952 persons. In 1901 Major Gorgas of the United States army took control of the sanitary government of Havana and made practical application of Reed's discovery, and since September, 1901, not one case of yellow fever has occurred in Havana.

Although Dr. Reed returned alive from Cuba, he died of appendicitis in Washington in the fall of 1902. His many friends, through the American Medical Association, have already raised a large sum for the purpose of commemorating his work in some appropriate way, and I hope that they will erect a suitable monument to this great American soldier, who has already saved more human lives than ever a Napoleon or an Alexander destroyed.

And now in the very few minutes which remain I shall link together two other discoveries, the one English and the other American. These observations have placed surgery in the position of an approximately exact science. I refer to the discovery of antiseptics and anesthesia.

Sir Joseph Lister was the first man to emphasize the importance of using clean instruments, dressings, and other appliances while performing surgical operations. In 1878 he published his article entitled "The Germ Theory of Fermentation and Its Bearing on Pathology." He emphasized the importance of keeping a wound free from all bacterial life, and thereby greatly lessened the mortality in all surgical procedures.

It is difficult in these days to appreciate the havoc wrought by surgical infection in preaseptic times, but these are things of the past, and have been replaced by the brilliant surgery of the brain and peritoneal cavity, which many of you have already witnessed. Innumerable lives have therefore been saved by Lister's contribution to medicine. Our friends, Professor Latimer and Professor Keirle, could tell you another story. They might vividly describe the dreaded hospital gangrene, passing through whole wards filled with wounded, and leaving at times a mortality of 20 to 40 per cent. They might recall long night vigils when they waited for secondary hemorrhage after amputations.

The discovery of anesthesia is a matter of especial interest to the College of Physicians and Surgeons and the Baltimore College of

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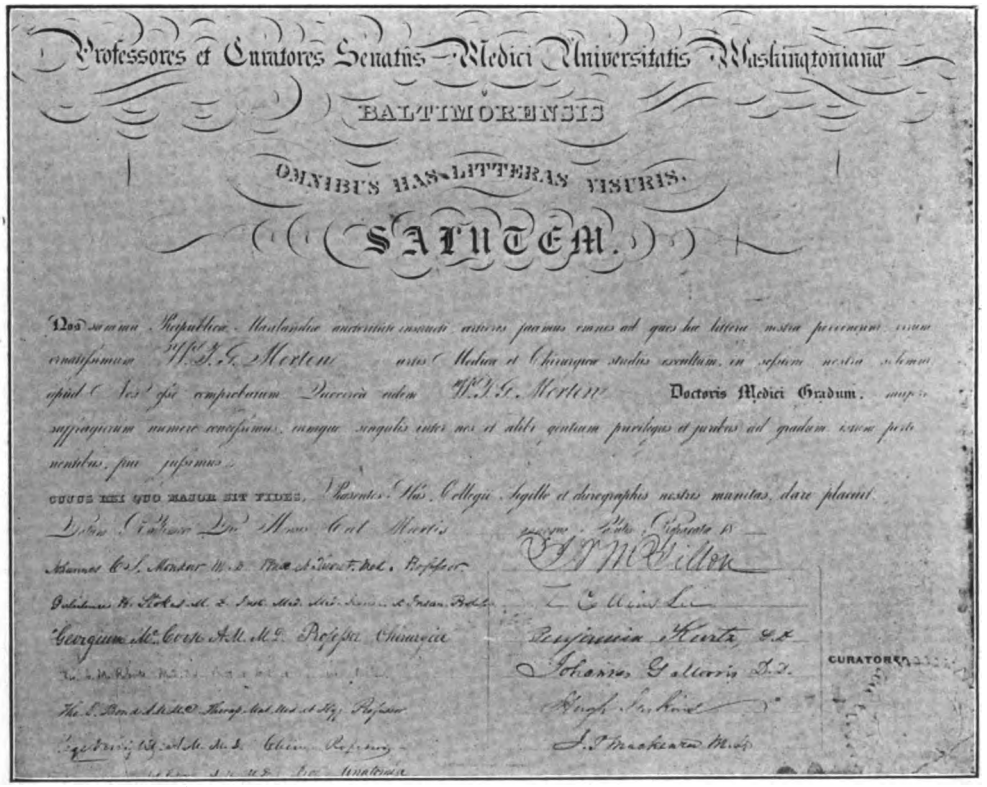
Dental Surgery, since these affiliated institutions helped to train and honor William T. G. Morton, the discoverer of ether.

Dr. Morton was born in Charlton, Mass., on August 9, 1819, and in 1840 he studied dentistry at the oldest dental college in the world, the Baltimore College of Dental Surgery. This college was then connected with the Washington University of Medicine, which has since become the College of Physicians and Surgeons of Baltimore.

Various attempts were made during antiquity and the Middle


Professores et Curatores Senatus Medici Universitatis Washingtoniana
BALTIMORENSIS
OMNIBUS HAS LITTERAS VISURIS.
SALUTEM.
Doctoris Medici Gradum.
CUIUS REI QUO MAJUS SIT FIDES,
CURATORES

1. Honorary Degree in Medicine Granted Morton by Washington University (Loaned by Dr. Wm. Morton, of New York.

Ages to find a substance which would produce insensibility to pain, but such attempts were unsuccessful. The decoction of mandragora, opium, and cannabis indica were all used as inhalations, but their use proved unsatisfactory.

When we see a patient sink peacefully to sleep and spend hours under the surgeon's knife without any pain we find it impossible to appreciate the terrors of a surgical operation in the olden times. And yet picture to yourselves an operation without anesthesia for the removal of a stone in the bladder lasting an hour—the writh-

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ing and shrieks of the patient only interrupted by the grinding noise of crushing the stone or the admonitions of the surgeon to the victim: imagine, if you can, the sight of the instruments, and the patient slowly witnessing the amputation of a limb, only to suffer the application of red-hot irons in order to stop the bleeding; add to this the shock, often fatal, which followed such operations, and you have a faint idea of what surgery was before anesthesia.

We have not the time to consider the evolution of anesthesia, and must pass over the hints given Morton by Sir Humphrey Davy and Horace Wells, who both worked with nitrous oxide. Dr. Morton left Baltimore, after graduating in dentistry, and began the study of medicine at Harvard University in November, 1844. It is said that his preceptor, Dr. Charles T. Jackson, suggested to him the use of sulphuric ether, but be this as it may, William Morton performed all of the experiments and made the final convincing test. He first rendered dogs unconscious with ether, and soon after this he attempted a bold experiment. He shut himself in his room, saturated his handkerchief with ether, and soon became unconscious. When he first regained consciousness he was unable to move, and thought that he was dying, and he feared that his discovery would be lost to the world. But he soon regained his muscular control, and after that anxiously awaited the chance to administer this drug in practice. This opportunity came the same night. Eben Frost, a patient, called with a very sore tooth, and when Morton told him that he could extract the tooth without pain Frost consented to the use of ether. Morton's experiment was entirely successful, and the painless extraction of the tooth followed.

The final step in the introduction of this great discovery to the world consisted in its use in the surgical amphitheater of the Massachusetts General Hospital on October 16, 1846, when Dr. John Collins Warren, one of the most prominent of American surgeons, allowed Morton to render unconscious one of his patients. The amphitheater was crowded with students, and Warren was surrounded by the most prominent surgeons of Boston. After some delay Dr. Warren was about to start the operation, when Morton entered. The surgeon turned abruptly and remarked, "Well, sir, your patient is ready." Morton made no reply, but placed his glass flask over the patient's face, and in a few minutes he remarked, "Dr. Warren, your patient is ready." The surgeon then removed a vascular tumor from the neck of Gilbert Abbott without pain or return of consciousness until after the operation was completed. Dr. Warren turned to the class and said, "Gentlemen, this is no humbug," and Bigelow remarked, "I have seen something today that will go around the world."

This discovery did go round the world bearing the tidings of

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2. Morton's Lecture Cards—Harvard Medical School.

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freedom from pain and suffering to millions of people. Its beneficent results are before each one of you every day, but we should all bear in mind that the relief of pain is not its only advantage. In rendering patients unconscious, and therefore quiet, it enables surgeons to attempt very delicate operations around arteries and nerves. They can also prolong operations and attempt hundreds of surgical feats which were hardly dreamed of before the days of Morton. Shock is also avoided and the exacting details of aseptic surgery can be thoroughly carried out. Thus pain has been conquered and life lengthened by Morton's immortal discovery.

It would be most satisfactory, in closing the consideration of this subject, to speak of the honor, praise, and gratitude which were paid to William Morton, but history has written otherwise. His life was henceforth clouded by disputes and controversies with Wells, Jackson, and others concerning priority of discovery. Attempts were made to interest Congress in his behalf, and several bills were proposed to reward the discoverer of anesthesia. The President, however, refused to sign the final bill, and thereby placed upon our national record a blot which I hope a spirit of mercy has long since wiped out. The trustees of the Massachusetts General Hospital presented him with a silver box containing $1000, and I take especial pride in stating that in 1852 his Alma Mater, now known as the College of Physicians and Surgeons of Baltimore, presented him with an honorary diploma in medicine. On it you will find the names of Monkur, McCook, Roberts, Bond, Lee, Morris, Jenkins, and Mackenzie. Many of these names are still prominent in a younger generation of medicine in Baltimore. I hope to be pardoned for adding that my grandfather's name, William Hughes Stokes, is also on this diploma, but I rejoice in the fact that he was able to aid in granting ever so small an honor to a man who was certainly not justly honored in his day.

Morton died poor and disheartened in 1868 at the age of 48, but his name will live forever. And as long as men and women suffer they will always bear a sense of deepest gratitude to him who "made of pain a dream."

And if before closing we can briefly review these four great medical discoveries, we may, I think, take just pride in the fact that two of them were made by Americans and two by Englishmen. Maryland may also feel proud of having taken a part in the education of Reed and Morton, and Virginia and Massachusetts must share with us this honor. But, aside from local pride, the study of great men and great deeds of medical history should have a profound effect upon the character of any medical man or student who reads such history aright. Then diligently search these honorable records, young men, in the hope that it may be said of you as was said of Edward Jenner—"and he stood between the living and the dead, and the plague was stayed."

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Current Literature

REVIEW IN MEDICINE.

Under the Supervision of Thomas R. Brown, M.D., Baltimore.

ULCER OF THE STOMACH AND DUODENUM.

Howard (*American Journal of the Medical Sciences,* December, 1904) analyzes all the case of round ulcer that have occurred in the clinic of Dr. Osler at the Johns Hopkins Hospital. Eighty-two cases of round ulcer have occurred in the various services of the hospital in a period of 15 years or in 44,338 admissions. The frequency of round ulcer for the hospital, therefore, was about one-fifth per cent. This is distinctly less than the incidence of round ulcer in hospitals in other cities. In this series the relative frequency in men and women seemed to be about the same. As regards occupation, indoor work seemed to be far more likely to be productive of ulcer than outdoor work. In 47 cases there was a definite history of previous stomach trouble, while in seven cases there was a positive history of trauma. Arteriosclerosis was present in about one-half the cases and to a marked degree in about one-quarter of the cases. The three cardinal symptoms—vomiting, pain, and hematemesis—were found in 85, 83, and 76 per cent. of the cases, respectively. Of these symptoms, pain was usually the first indication of the existence of the disease and was its most constant and distinctive feature. In more than one-half the cases it was usually referred to the epigastrium. Of the cases in which vomiting of blood took place, in two-thirds the blood had a coffee-ground appearance, in one-third a bright red. In most of the cases the appetite was fair or good, while constipation was present in about three-fifths of the cases. An analysis of the contents of the stomach after the Ewald test-meal showed that hyperchlorhydria was present in only 18 per cent. of the cases tested—much lower than the results met with in the majority of the series of cases of gastric ulcer. The average number of leucocytes was within normal limits, while the hemoglobin, determined in 62 cases, averaged 58 per cent.

As complications of the disease, Howard discusses pyloric obstruction, death from hemorrhage, perforation with general or with local peritonitis, parotitis, tetany, and ulcus carcinomatosum.

The chronicity of the disease is well recognized, and the usually-accepted time limit is from three to five years.

The medical treatment employed was similar to the treatment in vogue elsewhere, that is, absolute bodily rest for from three to six weeks, rectal-feeding for from 5 to 14 days, regulation of the bowels, correction of the anemia, if present, by iron or arsenic, while if hyperacidity was present it was treated with large doses of carbonate of magnesia and occasionally by gastric lavage. The

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indications for surgical treatment, according to Mayo Robson, are, first, perforation; second, perigastric adhesions; third, lack of success of prolonged medical treatment; fourth, recurring and profuse hematemesis; fifth, certain cases of acute hematemesis.

The conclusions of Howard's paper are as follows:

1. Gastric ulcer is rare in the Johns Hopkins Hospital as compared with cancer, the respective incidences being 1 to 225 and 1 to 56 general admissions.

2. Gastric ulcer in our series was as common in the male as in the female. In the male the percentage of greater frequency was between the ages of 40 and 50—a decade later than usual.

3. Ulcer was in our cases relatively more frequent in the colored race and among Germans.

4. Vomiting occurred in 85.3 per cent., pain in 82.9 per cent., and hematemesis in 75.6 per cent.

5. Great loss of weight may be present. Thus in 36 cases there was a loss of more than 10 pounds, and in nine of 40 pounds or more.

6. Our statistics would indicate that hyperchlorhydria is not so constant as is usually maintained. It was present in only 17.6 per cent. of our cases.

7. The blood picture is one of chloranemia as seen from the average count (hemoglobin 58 per cent., red-blood corpuscles 4,071,000, white-blood corpuscles 7500 per c. mm.).

8. Hemorrhage was the cause of death in 8.5 per cent. of the total number of cases and in 29.5 per cent. of the fatal cases.

9. Perforation is rare (three cases, or 3.6 per cent., of our series). General peritonitis occurred in but one instance (1.2 per cent.).

10. Ulcus carcinomatosum is rare—at least 4.8 per cent. of our series.

11. Operation is indicated in all cases with perforation or perigastric adhesion, and in cases of copious or recurring hemorrhage when medical means have failed after a fair trial.

12. The mortality of the series was 29.3 per cent. In the cases, however, which received treatment there was a mortality of only 18.8 per cent.; in those receiving medical alone, 8.6 per cent.

* * *

SLEEPING SICKNESS.

So much work of interest has been done in regard to this most interesting of African diseases, notably by the English commission and the Portuguese commission, that perhaps it would be of interest to briefly sketch the result of these investigations as far as they have gone at present. Bruce, Nabarro, and Greig in their "Fur-

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ther Report on Sleeping Sickness in Uganda" bring forward evidence to show:

1. That sleeping sickness is caused by the entrance into the blood and cerebro-spinal fluid of a species of trypanosoma.

2. That this species is probably that discovered by Forde and described by Dutton from the west coast of Africa, and called by him trypanosoma Gambiense.

3. That the so-called cases of trypanosoma fever described from the west coast may be, and probably are, cases of sleeping sickness in the earliest stages.

4. That monkeys are susceptible to sleeping sickness, and show the same symptoms and run the same course, whether the trypanosomes injected are derived from cases of so-called trypanosoma fever or from the cerebro-spinal fluid of sleeping sickness.

5. That dogs and rats are partially susceptible, but that guinea-pigs, donkeys, oxen, goats, and sheep up to the present have shown themselves absolutely refractory.

6. That the trypanosomes are transmitted from the sick to the healthy by a species of tsetse fly, *Glossina palpalis*, and by it alone.

7. That the distribution of sleeping sickness and *Glossina palpalis* correspond.

8. That sleeping sickness is, in short, a human tsetse-fly disease.

The interesting points in this communication were that the distribution of sleeping sickness and of the tsetse fly in Uganda were shown to be practically identical, that the trypanosomes in ordinary trypanosoma fever and those found in the blood in sleeping sickness were of the same species, that healthy monkeys could be inoculated with the blood of patients suffering with sleeping sickness and showed symptoms analogous to those of sleeping sickness in man, and also that monkeys could be infected by tsetse flies who had been allowed to feed on patients who had suffered with sleeping sickness.

More recently (*Lancet*, July 30, 1904) Hodges, who is medical officer to the Uganda Protectorate, gives a most interesting *résumé* of our knowledge of this disease. According to him, sleeping sickness has been known in West Africa since 1803. The Uganda epidemic, however, did not become known to Europeans until 1900. It is quite possible, however, that the disease is endemic in certain spots, and becomes epidemic only under favorable conditions.

All ages and both sexes are attacked by the disease, although it is rare in children under three years of age. Europeans are practically immune.

Clinically, sleeping sickness has been divided into three stages, but their limits are very ill-defined. These are the early stage, the pronounced stage, and the lethargic or somnolent stage. Probably the earliest symptoms are chronic, persistent or intermittent head-

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ache, lassitude and slight fever, general enlargement of the lymphatic glands, and a peculiar tremor of the tongue.

In the second stage the most marked feature is the characteristic alteration which begins to take place in the patient's facial expression and general appearance, often accompanied by a change in his manner, habits, and disposition. The first symptoms of this stage are not infrequently ushered in by a nervous crisis, as epileptiform fits, attacks of mania, etc., and in this stage the twitching of the tongue becomes more marked and the tremor begins to spread to other parts of the body. The muscles become flabby, and later show signs of wasting, while the patient's mental condition becomes more and more dull, gradually passing into the third, or lethargic stage, in which they eventually die. Intermissions or remissions of considerable length may be met with in the course of the disease.

The two organisms at present studied in connection with the sleeping sickness are the diplococcus, described by the Portuguese commission, and the trypanosome, described in such detail by Bruce. According to Hodges, the hypothesis of the trypanosome causation would seem to cover more of the facts.

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VENOUS THROMBOSIS OCCURRING IN THE COURSE OF TYPHOID FEVER.

Thayer (*Medical News*, October 1, 1904) discusses the occurrence of venous thrombosis as a complication of typhoid fever. This complication was met with 39 times among 1463 cases of typhoid fever treated at the Johns Hopkins Hospital. As to the distribution of the lesions, in 40 instances they were found in the lower extremities, in the upper extremity in one, and in the pulmonary artery in one. The usual symptoms were fever, pain, edema, while in 11 of the cases chills were also met with. In seven of the cases secondary infections of various kinds had preceded or coexisted with the onset of the thrombosis.

Thayer's conclusions are as follows:

1. In 42 cases of typhoid thrombosis the onset occurred almost invariably in the third week or later.

2. Local pains and fever were usually the first symptoms. The fever sometimes preceded the localizing symptoms.

3. In 28.2 per cent. of our venous thrombosis occurring in connection with typhoid fever there were chills. In several instances the chill preceded the appearance of localizing symptoms. In the past two years I have seen in consultation three further cases in which otherwise unaccountable chills during convalescence from typhoid fever were followed by a complicating thrombosis.

4. Venous thrombosis in typhoid fever is usually associated with an increase in the number of leucocytes. The extent of the leucocytosis depends apparently, in part at least, upon the extent of the lesion. It may be moderate, but in other instances of considerable extent—over 20,000. In mild cases it may be absent.

5. The thrombosis is commonest in the lower extremities,

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especially on the left side. The femoral vein is involved with particular frequency.

6. In the event of a sudden severe pain in the lower part of the abdomen coming on during the latter part of typhoid fever and associated with a leucocytosis, the possibility of iliac thrombosis should always be considered.

7. Venous thrombosis in the lower extremity is always a serious complication of typhoid fever. Although the immediate danger is not great, the after-results are often grave. In thrombosis of the femoral or iliac veins the affected extremity is usually considerably and permanently enlarged, and there is usually more or less permanent disability, extensive varices, often resulting in ulceration; marked weakness of the limb, frequent cramps in the muscles, especially at night and after overexertion. In thrombosis of the popliteal or deep veins of the calf alone the permanent changes are much less severe, though the leg always remains larger than the other.

8. In thrombosis of the femoral vein a greater or less part of the blood from the affected extremity is often carried up by the iliac vein of the opposite, the current crossing the abdomen through anastomosis in the hypogastrium, resulting in a characteristic triangular area of varicose veins.

REVIEW IN PATHOLOGY.

Under the Supervision of José L. Hirsh, M.D., Baltimore.

ATYPICAL CASES AND DUST INFECTION. Robert Hessler. *American Medicine,* October 1, 1904.

By dust disease is meant not the specific diseases which can be transmitted through the agency of dust, such as pneumonia or tuberculosis, but those heretofore vague and illy-defined symptoms that are variously referred to as cold, migraine, etc. Cases of dust disease are to be especially looked for under and separated from recognized diseases in which rheumatic and gouty diathesis play a part. It is most prevalent in crowded cities; country people may become affected on going to the city. It is absent among arctic explorers and weather observers on high mountains; men returning home are attacked again. The manifestations of the disease vary somewhat. Cases may be divided into groups, depending on the part of the body or organ chiefly affected. Dust disease belongs to that class of affections in which there are no marked recognizable pathologic lesions. Mucin may play an important part. The causative factor is infective dust. It is difficult to say whether it is due to a microbic invasion or an intoxication. It is not so much on the pathology and symptomatology as the diagnosis that the chief importance is to be laid. The fact stands out that there is an infection due to inhalation of a contaminated atmosphere.

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RECENT INVESTIGATIONS IN HAY FEVER. R. A. Glegg. *Medical News,* September 10, 1904.

The researches were conducted by Dunbar, which show that there is in reality but one exciting cause for hay fever, this being the pollen of grasses and of certain other plants. He found that these pollens could artificially excite attacks of hay fever when applied to the conjunctival mucous membrane of persons disposed to the disease, and this even outside of the hay-fever period. Dunbar succeeded in isolating the peculiar poison in the toxic pollen, and found it to be an albuminous substance so toxic that even .000025 milligram of the proteid body, consisting of this active albumen and also of inert globulen, could excite irritation of the conjunctivae of a predisposed patient. This amount of toxin would be contained in two or three pollen grains. Large doses produced very severe attacks, and toxin injected subcutaneously produced most unpleasant and indeed dangerous symptoms in several hay-fever patients. This toxin is absolutely without any effect on normal persons. By injecting pollen toxin into animals Dunbar succeeded in obtaining an antitoxin which neutralized the toxin in vitro and cut short attacks of hay fever artificially produced by the toxin. Furthermore, the antitoxin cut short attacks of the natural disease. Owing to the peculiar nature of the disease and the constant reinfection of the mucous membrane by exposure to the outside air, Dunbar has found it to be necessary to use the serum prophylactically, to sleep with the windows closed, apply serum in the morning before rising both to eyes and nose, and again during the day on the appearance of the slightest irritation in the conjunctivae or nasal mucous membrane. By this means he has succeeded, and others have also been successful, in acquiring freedom from attacks.

* * *

HUMAN PIROPLASMOSIS. S. Donovan. *The Lancet,* September 10, 1904.

Donovan gives a description of the disease, due to the sporozoan parasite, which is known by the name Donovan-Leishman organism. The disease, which was first observed in Madras, is doubtless identical with the disease known as kala-azar. The organism of the disease was first found in the blood taken from the spleen in June, 1903, and since this time he has noted 72 cases, all diagnosed from the blood of splenic puncture. The death-rate has been 30.55 per cent.

Donovan states that he was led to discover the parasite by post-mortem examination of the splenic blood of those cases usually diagnosed as chronic malaria and characterized by chronic irregular pyrexia, with enlargement of the liver and spleen, bronchitis, edema of the feet, subcutaneous hemorrhages, diarrhea and cancrum oris, the absence of malarial organisms in the peripheral blood, and not being influenced by quinine. The parasites appeared as numerous peculiar, round, and oval ringlike little bodies, with two masses of chromatin situated on opposite poles. At first Donovan took these to be the resting stage of the malarial organ-

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ism. In the peripheral blood the parasites are of a different form, very rarely found, and only when the temperature is high, between 103° and 104° F. The same organisms have been found in the ulcers of the skin of patients suffering in piroplasmosis. The organisms have been found in the disease known as kola-azar.

The paper describes in some detail the symptoms associated with the disease, and gives the results of the post-mortem examinations.

The number of organisms taken from the spleen during life varied from one to thirty or more in a field (Zeiss' apochromatic objective 2 mm. and compensation eyepiece No. 4). In some instances the slide had to be examined for a quarter of an hour before half a dozen parasites were found. The number, although varying with the amount of blood taken up in the syringe, is not dependent on the severity of the disease or size of the spleen. Patients very ill and with marked pyrexia may have but few, and, on the other hand, mild cases with no appreciable rise of temperature show the piroplasmata in large numbers.

* * *

ANTIDIPHTHERITIC-SERUM TABLETS. Martin. *Rev. Mens. des Mal. de L'enfance; Journal of the American Medical Association*, October, 1904.

In this communication from the Pasteur Institute Martin states that he has established that the curative serums contain a sensibilizing substance when they are able to induce agglutination which ordinary serums do not have. He also announces that antidiphtheria serum applied locally to the throat in case of diphtheria rapidly reduced the pain in all his experiments. Local applications are too transient for much benefit to be derived in this way, and still better results are obtained by incorporating dried serum with some vehicle which slowly dissolves in the mouth. Tests of serum tablets thus made and given to adults and older children showed that the pain rapidly subsided under their influence, the membranes turned yellow, swelled, and were soon cast off. Cultures taken from the throats after using these tablets showed that a much smaller number of colonies developed after 24 hours than in control cultures, and very few could be discovered after 48 hours. His experience demonstrates that the persistence of the diphtheria bacillus in the throat can be diminished by using these tablets, and that they will also serve as a prophylactic. He never failed to make the usual subcutaneous injections of the serum in cases of established diphtheria, and regards the tablets in such conditions as merely an adjuvant.

* * *

TRANSUDATES AND EXUDATES, WITH REPORT ON SEVENTY-FIVE FLUIDS. Joseph L. Miller. *American Medicine*, November 12, 1904.

Fluids from 93 patients were examined, and include the transudates and exudates in the abdominal and pleural cavities. A review of these results is instructive. Whether the process is primarily inflammatory or not, epithelial cells may be present. The

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absence of epithelial sheets has been considered characteristic of exudates, but the author's results do not support this view. There is a slight tendency to greater abundance of neutrophiles in ascites, due to portal stasis, than in tuberculous processes, but not sufficiently marked or constant to be of diagnostic value. The cellular elements present in ascites due to hydremia does not necessarily differ from those in tuberculous peritonitis or cirrhosis, except that they are usually less abundant. The predominance of neutrophiles in ascitic fluids may mean tuberculosis, acute peritonitis, or cirrhosis. It may be that the predominance of neutrophile cells always indicates the presence of inflammation, primary or secondary, but there is nothing in the specific gravity or amount of albumin to indicate that this is the case. No characteristic cells were found in cases of carcinoma of the peritoneum, but the epithelial cells were much more abundant and showed more fatty degeneration than in any other fluids examined, except a case of pseudo-leucemia with involvement of the mediastinum, in which the finding resembled closely that of the carcinoma.

A review of pleural fluids shows the frequent presence of sheets of epithelial cells in exudates. This, Miller thinks, can readily be explained by the inflammatory process involving only a portion of the serous surface, the presence of the fluid on the uninflamed surface causing marked desquamation. It may be true that it is only in tuberculous pleurisies, secondary to lung involvement, that the neutrophiles are found in abundance, but this is of little practical value, as it is usually impossible to detect a tuberculous focus in a lung compressed by fluid. It is apparent that the lymphocytes predominate in tuberculous pleurisies, but the same may be true in a hydrothorax, and when we may find epithelial sheets in both the picture is identical. To be sure, as a rule, the cellular elements are more abundant in tuberculous pleurisies than in transudates, but not, however, of a sufficient degree to be of diagnostic value. In the acute non-tuberculous pleurisies the neutrophiles are usually abundant, and, as a rule, the predominating cell. When fluids of this type have remained in the cavity for a long time they present a lymphocytosis. One case of this type is found in my series. The presence of a large percentage of neutrophiles may mean either an acute simple pleurisy or a tuberculous pleurisy secondary to a lung focus. From a study of these cases the presence both relatively and absolutely of a large number of lymphocytes is only found in primary tuberculous pleurisy, but the absence of abundant lymphocytes does not mean that the process may not be tuberculous.

Regarding the cerebro-spinal fluids, too few cases have been studied to draw any conclusions. Significant, however, is the absence of increase in lymphocytes in the single case of cerebro-spinal syphilis examined.

The following are the conclusions of the studies:

1. The color of the fluid, its reaction, and size of the erythrocytes are of little diagnostic value.

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2. Nucleoalbumen is usually much more abundant in exudates than transudates. However, many exudates fail to show more than a faint trace.

3. On account of the constancy of the salts present, the specific gravity and amount of albumen bear intimate relation.

4. Fluids from different body cavities of the same individual, or fluids of the same origin in different individuals, or successive tappings of the same cavity, may show marked variation in the amount of albumen, probably explained by the permeability of the capillaries, the degree of irritation of the serous surface, the condition of the patient's blood, tension of the fluid, the amount of absorption taking place, and possibly the blood-pressure.

5. Methods of estimating the bulk albumen, as Esbach's or Purdy's, are not applicable to serous fluids.

6. Reuss' formula is the most accurate simple method for determining the amount of albumen in serous fluids.

7. The diagnostic value of the specific gravity, or amount of albumen, is greatly lessened by the frequent presence, simultaneously, of several processes. A hydremia, as a result of anemia or transudation from pressure, may lower the specific gravity of an inflammatory fluid. Secondary inflammation, high tension of the fluid, or absorption taking place, may increase the specific gravity of a transudate.

8. At present there is no absolutely reliable method for determining the tuberculous character of a serous fluid.

9. The specific gravity of a fluid, when taken for successive tappings, may be of prognostic value.

10. Epithelial cells in sheets are not infrequently present in fluids of inflammatory origin.

11. The predominance of lymphocytes may be associated with a long-standing, simple pleuritis, a hydrothorax, or a tuberculous pleuritis.

13. The presence of relatively large numbers of neutrophiles in pleuritic fluids may be associated with an acute, simple, or a secondary tuberculous pleurisy.

13. The presence of numerous cells, chiefly neutrophiles, suggests an acute, simple pleuritis.

14. The presence of numerous lymphocytes, with few, if any, neutrophiles, indicates that the process is probably a tuberculous one.

15. In ascitic fluids there is little that is characteristic. Neutrophiles are usually more abundant in fluids, due to portal stasis from cirrhosis, than in tuberculous peritonitis.

16. An eosinophilia in one body cavity may occur along with a neutrophilia in another.

17. A study of the cellular elements in fluids from the pleural or abdominal cavities is of comparatively little diagnostic value either in differentiating transudates from exudates or in determining the character of the latter.

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Society Reports.

THE JOHNS HOPKINS HOSPITAL MEDICAL SOCIETY.

MEETING HELD NOVEMBER 21, 1904.

Experimental Streptococcus Arthritis.—Dr. Rufus I. Cole reviewed this subject and reported some work he had done during the past year with the purpose of throwing some light, if possible, on the nature of the arthritis of rheumatism. The tendency, he said, was nowadays to regard acute articular rheumatism as an acute infectious disease, and the following four theories had been advanced to explain the condition: 1. Rheumatism is due to a specific organism as yet unknown; 2. It is due to a specific diplococcus or streptococcus; 3. It is a mild pyemia resulting from infection with the ordinary streptococci or staphylococci; 4. It is due to an ordinary bacillus. Those who have argued for the specific nature of the disease have been able to isolate a diplococcus from the joints, the heart's blood, and the exudates of many cases. Meier, noticing the close connection between angina and rheumatism, has been able to isolate from the throats of anginal patients streptococci which produced acute articular rheumatism in animals. Mentzer has held that the angina and the anginal rheumatism in these cases were due not to a specific organism, but to the ordinary parasites of the mouth—most often to streptococci. Diplococci have, however, been isolated from many cases (most often from severe ones), the most recent report having been that of Lewis of Philadelphia.

The Specificity of the Diplococcus of Rheumatism.—Dr. Cole said that those who claimed for the organism isolated a specific nature based this claim chiefly on its morphology; a paired coccus, sometimes in chains, the pairing being most marked in recent cultures, and the general features quite similar to those of the streptococcus—these were its main characters. Marmorek's test was said not to be reliable in classifying the organism, and the dark discoloration in growths on blood agar—at one time thought to be characteristic—was said to occur also with other organisms. By inoculation of the organism isolated the production of arthritis, of endocarditis, and of chorea had been reported.

Experimental Arthritis.—Dr. Cole's own work was begun with a streptococcus isolated from the blood of a patient suffering with endocarditis, septicemia, and joint pains. Inoculations were made into the ear veins of several rabbits, and an arthritis was produced in practically every case. Another series of experiments was then carried out in which streptococci were used for the inoculations taken from patients suffering with various non-rheumatic conditions and giving no rheumatic history. Six races of streptococci were then used, no one of them being the streptococcus of rheumatism. In practically all of the rabbits so inoculated a typical arthritis was produced. The English technique was followed, an emulsion of the culture being injected into the ear veins. The rabbits first became somewhat languid, and later became lame first in one joint and then in another. At autopsy a thick, tenacious fluid was found in some joint of the body, and

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here the cartilage was smooth, but the synovial membrane injected. Smears from the exudate showed large numbers of diplococci with flattened sides. In two rabbits a typical endocarditis developed, and two showed twitching, inco-ordinated, possibly choreic movements. In other words, with streptococci from seven different sources results followed inoculations identical with those following inoculations of the so-called diplococcus of rheumatism, and the latter is therefore not specific. Dr. Cole called attention to the fact that the cases reported in the literature as having furnished specific organisms have been usually the severe cases with pericarditis and other complications. This fact, together with the frequency of a secondary invasion of streptococci, argued, he thought, against the specificity of the organisms obtained. Dr. Osler mentioned the specimens which Paynter obtained in his experiments, and called particular attention to the significant nature of the experimental subcutaneous fibroid nodules. He felt certain that the disease is an acute infection, but the organism, he thought, still undetermined. Dr. Cole said that Paynter and Paine had been able to get cultures from rheumatic joints, but that the attempts made at the Johns Hopkins Hospital had never been successful. Philip, who has reported elaborately on the subject, has also never succeeded in growing organisms from rheumatic joints. Dr. Bloodgood said that it has recently been noticed that in cases in which no organisms could be found in arthritic exudates the villi of the joint (particularly in gonorrheal cases) often contained bacteria.

The Mosquitoes of Maryland.—Dr. Kelly exhibited a case presented to him by Professor Smith of Rutgers in which the commoner varieties of mosquitoes—male, female, and larval forms—were beautifully mounted. He asked that further work be done to find out what forms infested Baltimore, and to eliminate the malarial bearers if possible. Dr. Thayer said that the work done thus far on the subject showed that three forms of anopheles were common in Maryland—the maculapennis or claviger, the punctipennis, and the crucians. The main source of the mosquitoes of Baltimore was said to be the drainage wells, which often go uncleaned for years.

Multiple Carcinoma of the Ileum.—Dr. Bunting showed the specimens from two cases of this condition. Primary malignant epithelial tumors of the small intestine were, besides, exceedingly rare. Only one has previously been seen in the Johns Hopkins Hospital, and only 30 could be found by Lubarsch in the whole literature. The first patient reported was a negro who had died with cardiac vascular symptoms. In the upper ileum six nodules were found which turned out, on section, to be carcinomata with alveoli consisting of small polymorphous cells and firm fibrous stroma with hyaline degeneration here and there. The tumors—though they answered only two of Billroth's requirements—were probably all primary. These tumors—and the ones reported in the literature have been similar—were small and occurred well along in the carcinoma age, grew slowly, and were relatively benign. They resembled the small skin carcinomata seen on the scalp and arising from the Malpighian layer (the Basalzellen Karsinom of Krohnpeker). The second patient showed symptoms of obstruction and a palpable mass in the right iliac fossa. Inoperable carcinoma was found at operation, and a colostomy was done. Autopsy showed multiple primary carcinomata of the small intestine, with no peritoneal involvement. Dr. Bloodgood said that these skin carcinomata were more frequently seen than

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formerly, due in part to earlier diagnosis and in part to a realization by the laity that growths anywhere are not to be neglected. Clinically they are only slightly malignant, and might almost be called benign epitheliomata.

BALTIMORE CITY MEDICAL SOCIETY.

SECTION OF CLINICAL MEDICINE AND SURGERY.

MEETING HELD DECEMBER 2, 1904.

Gastroenterostomy and Pyloroplasty.—This subject was reviewed by Dr. Finney, and a report of his own operation, with record of results to date, was presented. At the time of the first published account of the Finney pyloroplasty five cases were reported. Since then 80 cases have been recorded in the literature, and the results have been very satisfactory. The procedure was said to be really an anastomosis between stomach and duodenum, with division of the intervening structures, and it should more properly be called a gastropyloroduodenostomy. (Dr. Finney had, he said, recently operated on his twenty-second case.) In this series there had been two deaths—one in a diabetic, who died in coma, healing of the pyloroplasty being found to be perfect at autopsy, and the other a death from intestinal volvulus five days after operation, the healing again being perfect. This case emphasized the fact that the so-called "vicious circle," so often occurring in anastomosis between stomach and intestine and characterized by persistent vomiting, may in reality be an intestinal obstruction. Dr. Finney said that his series warranted him in reporting progress, though the operation was only to be recommended in benign stenosis. He had, however, gradually extended the class of cases in which he performed pyloroplasty. Most often it was done for cicatricial obstruction. In two patients chronic indigestion without cause was the indication, and both were relieved. It has also been efficacious for persistent uncontrollable vomiting. In two patients with active gastric ulcer the operation was done successfully.

Objections to Finney Pyloroplasty.—The objections raised to the operation were said to be, first, that it was difficult in cases where adhesions were present. Dr. Finney said this had not been the case in his series. Second, that it was not of use in the presence of active ulceration. Two cases of those reported had, however, shown this condition, and had done well. Third, that the operation did not give a low enough pyloric opening, but Dr. Finney said this could be made as low as desired.

Advantages of Pyloroplasty.—These, Dr. Finney said, were (1) absence of regurgitation of bile; (2) restoration of practically normal anatomical relations; (3) slight mutilation of tissue; (4) absence of opportunity for formation of peptic ulcer.

Gastroenterostomy.—The history of this operation was reviewed and the defects of each procedure noticed. Dr. Finney then described a method which he had recently used, similar to the procedure described by Scudder of Boston. The portion of bowel chosen was at the junction of duodenum and jejunum. Here the intestine runs directly downward, and anastomosis at this point provides direct passage for the food, allows for a posterio- operation, uses the most dependent portion of the stomach or leaves a short

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intestinal loop, in this way diminishing the likelihood of peptic ulcer. The operation of gastroenterostomy should, Dr. Finney said, be limited to cases of cancer in which a radical operation was out of the question.

Dr. Friedenwald reported the findings of stomach examinations made on patients operated on by the Finney pyloroplasty. Five cases were studied before and after operation. The gastric contents were collected one hour after an Ewald meal, five hours after a heavy dinner, and after a fast of 11 hours. In all five cases the dilated stomach was shown to be restored to normal and the gastric secretion to be much improved, and the retention of food in the stomach longer than normal to be abolished.

Dr. Martin said that he had always done the Heineke-Miculicz operation and had gotten fair results. He had had no deaths and knew of no objection to the operation. Von Hacker's gastroenterostomy did theoretically allow of biliary regurgitation, but practically the results were good after it.

Dr. Friedenwald was asked if there were any signs in these patients of intestinal upsets due to the premature discharge of unprepared food from the stomach functioning without its sphincter. He answered that in the first three weeks following operation intestinal symptoms were present, but that these later disappeared.

Neglect of Eye Cases.—Dr. Theobald discussed this subject with particular reference to the occurrence of total blindness. There were, according to the eleventh census, 50,000 totally blind persons in the United States, or an average of one in 1238 of population. Cohn and others have estimated that about 40 per cent. of the cases are avoidable; in other words, 20,000 totally blind persons in the United States are blind through somebody's fault. The percentage of total blindness is smaller among negroes than among whites. It is high in Ireland and Russia, and reaches one in 3300 of population in Iceland. In Holland, where average intelligence is high, education good, and ophthalmology well practiced, absolute blindness is less frequent than anywhere else in the world. The causes of this condition were said to be: (1) Congenital, a factor in only about 4 per cent. of the cases. (2) Idiopathic eye conditions. (3) Ophthalmia neonatorum. Nearly all of these cases could have been prevented—probably as many as 90 per cent. At Leipsic the introduction of Crede's prophylaxis reduced the occurrence of the condition from 10 to ½ per cent. (4) Glaucoma (inflammatory). This could almost always be checked by operation. (5) Diseases of the uveal tract. (6) Diseases of the cornea. Treatment ought to reduce immensely the frequency of blindness following this condition. (7) Sympathetic ophthalmia. This ought to occur only in those cases where the obstinacy of the patient prevents treatment. (8) High myopia. (9) General diseases. In lues of the brain recognition of the condition and prompt treatment will diminish the frequency of blindness. In diseases of the spinal cord there is often little to be done. Ulcers of the cornea in acute infectious diseases can usually be controlled by proper treatment. (10) Traumatism. Stupidity and obstinacy on the part of patients and a disposition on the part of general practitioners to take the responsibility in cases really belonging to specialists—these were said to be the two main factors in avoidable blindness. Happily, in recent years a decrease in the frequency of the condition had been noted among civilized peoples.

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Book Reviews.

MEDICAL LABORATORY METHODS AND TESTS. By Herbert French, M.A., M.D. (Dixon), M.R.C.P. (London); Medical Registrar Guy's Hospital; Gillson Scholar Society of Apothecaries of London; Radcliffe Traveling Fellow Oxford University.

The appearance of Dr. French's book calls attention to the fact that a useful field previously unfilled has now been occupied. There is certainly a necessity for a brief handbook on the elements of clinical analysis, and Dr. French appears to have struck a happy medium between lengthy theoretic discussions such as are contained in larger works of others, like V. Jascks and Simon, and a brevity so great as to seriously damage the value of the book.

The laboratory methods described are those ordinarily employed in the routine work of the large general hospitals by the internes, resident pathologists, and assistants, among whom it will doubtless find its longest practical usefulness. Dr. French has doubtless been influenced by his connection with Guy's Hospital, which possesses a particularly abundant supply of clinical material. The student of medicine will find all the common procedures of the clinical laboratory set forth briefly and clearly, and the practitioner of medicine will be enabled to rapidly familiarize himself with modern methods of clinical analysis. With each test is usually given its special pathological significance and the fallacies to be guarded against.

The 73 illustrations are taken from drawings and sketches, and are semi-diagrammatic, a useful feature of a book of this character. Eight bodily secretions of excretions are considered, viz: (1) Urine, (2) blood, (3) sputum, (4) pus, (5) gastric contents, (6) feces, (7) contents of skin lesions, (8) examination of serous exudations, cerebro-spinal and cystic fluids. In addition tests are given for the commoner poisons (arsenic, the corrosive poisons, phosphorus, prussic acid, and the common alkaloids—belladonna, opium, and strychnine).

BOOKS RECEIVED.

A MANUAL OF PERSONAL HYGIENE. Edited by Walter L. Pyle, A.M., M.D. Second edition, revised and enlarged. Publishers, W. B. Saunders & Co. 1904. Price $1.50 net.

ATLAS AND EPITOME OF GENERAL PATHOLOGIC HISTOLOGY. By Dr. H. Durck of Munich. Edited by Ludvig Hektoen, M.D. Publishers, W. B. Saunders & Co. 1904. Price $5 net.

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GALLSTONES AND THEIR SURGICAL TREATMENT. By B. G. A. Moynihan, M.S., London. Publishers, W. B. Saunders & Co. 1904. Price $4 net.

DIET IN HEALTH AND DISEASE. By Julius Friedenwald, M.D., and John Ruhräh, M.D. Publishers, W. B. Saunders & Co. 1904. Price $4 net.

DISEASES OF THE LIVER, GALL-BLADDER, AND BILE DUCTS. By H. D. Rolleston, A.M., M.D. Publishers, W. B. Saunders & Co. 1904. Price $6 net.

HOW TO STUDY LITERATURE. By Benjamin A. Heydrick, A.B. (Harv.). Third edition, revised and enlarged. Publishers, Hinds, Noble & Eldredge. 1904. Price 75 cents.

PROGRESSIVE MEDICINE. Edited by Hobart Amory Hare, M.D., and H. R. M. Landis, M.D. Volume VI, No. 4, December 1, 1904. Publishers, Lea Bros. & Co. $6 per annum.

A TEXT-BOOK OF CLINICAL DIAGNOSIS. By L. Napoleon Boston, A.M., M.D. Publishers, W. B. Saunders & Co. 1904. Price: Cloth, $4 net; sheep or half-morocco, $5 net.

A TEXT-BOOK OF HUMAN HISTOLOGY. By Drs. A. A. Bohm and M. von Davidoff, and G. Carl Huber, M.D. Second edition, revised and enlarged. Publishers, W. B. Saunders & Co. 1904. Flexible cloth, $3.50 net.

LIGHT ENERGY. By Margaret A. Cleaver, M.D. Publishers, Rebman & Co. 1904.

A LABORATORY MANUAL OF HUMAN ANATOMY. By Lewellys F. Barker, M.D. (Tor.), assisted by Dean De Witt Lewis, A.B., M.D., and Daniel Graisberry Revell, A.B., M.D. Publishers, J. B. Lippincott Company. 1904.

EXAMINATION OF THE URINE. By G. A. de Santos Saxe, M.D. Publishers, W. B. Saunders & Co. 1904. Price $1.50 net.

A TEXT-BOOK OF MATERIA MEDICA. By Robert A. Hatcher, Ph.G., M.D., and Torald Sollmann, M.D. Publishers, W. B. Saunders & Co. 1904. Price $2 net.

A HAND-BOOK OF SURGERY. By Frederic R. Griggith, M.D. Publishers, W. B. Saunders & Co. 1904. Price $2 net.

MAGEE AND JOHNSON'S EPITOME OF SURGERY. By M. D'Arcy Magee, A.M., M.D., and Wallace Johnson, Ph.D., M.D. Publishers, Lea Bros. & Co. 1904. Price $1 net.

NAGEL'S EPITOME OF NERVOUS AND MENTAL DISEASES. By Joseph Darwin Nagel, M.D. Publishers, Lea Bros. & Co. 1904. Price $1 net.

PAIN AND ITS INDICATIONS. By Edward C. Hill, M.S., M.D. Publishers, G. P. Engelhard & Co. 1904. Price $1.

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PHYSIOLOGICAL FEEDING OF INFANTS. By Eric Pretchard, A.M., M.D. Second edition. Publishers, W. T. Keener & Co.

SUPPRESSION OF TUBERCULOSIS. By E. von Belring. First edition. Publishers, Wiley & Sons.

PHYSIOLOGICAL CHEMISTRY. By Charles E. Simon, M.D. Second edition. Publishers, Lea Bros. & Co.

TREATISE ON OBSTETRICS. By Edward P. Davis, A.M. M.D. Second edition. Publishers, Lea Bros. & Co.

BEING DONE GOOD. By Edward B. Lent. Publisher, *Brooklyn Eagle.*

HOW TO COOK FOR THE SICK. By Helena V. Sachse. Second edition. Publishers, J. B. Lippincott Company. 1904.

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MARYLAND MEDICAL JOURNAL.

JOHN S. FULTON, M.D., *Editor.*

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BALTIMORE, JANUARY, 1905

THE MARYLAND ASSOCIATION FOR THE PREVENTION AND RELIEF OF TUBERCULOSIS.

TO PROPOSE a new society in these days is to imperil one's friendships. The State of Maryland offers scope, however, for just one new society, and its sponsors have every reason to be satisfied with the reception accorded to their project. The Maryland Association for the Prevention and Relief of Tuberculosis, organized at McCoy Hall on December 13, represents the most important step yet taken by the Tuberculosis Commission of Maryland in the practical application of the results furnished by its admirable study of tuberculosis as it presents itself in Maryland. The work of the Commission from its inception has kept in view all, literally all, the boundaries of the subject.

The great number of associations and commissions engaged in this great crusade of modern hygiene might suggest to the uninformed that the prevention of tuberculosis is a comparatively simple and rather popular undertaking. On the contrary, the accessory causes are so bound up with political, social, and industrial life that those who are best informed have been fairly intimidated by the immensity of the task of controlling tuberculosis. It is a very great merit of the Tuberculosis Commission to have presented the subject to the people of the State in all its length and breadth. An attempt to apply at once the remedial measures indicated by strictly scientific knowledge of the causes of tuberculosis might quickly assume the features of a revolution and might end ingloriously. As Dr. Welch remarked in his address, the primary essentials of prophylaxis are clear and simple, but the problem, as a whole, is so complex that the existing governmental agencies cannot cope successfully with its difficulties. Dr. Welch, indeed, fully answered the question, "Why does the campaign against tuberculosis, unlike other public-health problems, require the active participation of a large body of volunteers?" In dealing with most of the infections, the essential cause, in or issuing from the sick body, is the object of attack. It suffices to circumscribe the radius of influence of the individual during the period of illness. The number of such individuals present in a community at any one time is small, the nature of their infection is easily recognized, the dates of onset and of complete recovery can be very approximately determined, their disability restricts their movements, their period of infectiousness is short, the great majority of them are children, the number of susceptible individuals in the community is comparatively small, and the economic damage is not very great. Tuberculosis presents a contrast to these conditions. The number of infected individuals is very large, the disease cannot be recognized at the time of onset, the period of infectiousness is very

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long, their freedom of movement is for a long time unrestricted, the great majority of them are young adults, the number of susceptible individuals is very large, and the economic damage is very large and continuous. The accessory causes of tuberculosis are, for the present at least, as important as its essential cause, and these are found in nearly all the circumstances which mark social distinctions. Age, sex, race, occupation, housing, food, wages, habits—all these individual relations and as many more political relations complicate the tuberculosis problem. The State can do much to limit the infective energy of the consumptive, and the State can do something to strengthen the resistance of the citizens in mass, but more than on these things the safety of the State will always depend upon the number of individuals who know how and are able to defend themselves in the particulars of their environment. It is not in the power of an American State to supply this knowledge or to compensate imperfect self-defense. The details of such work are too intimate for the State to undertake, but they may be very properly undertaken by a voluntary association. As the purpose of organized charity is to restore the individual to economic self-sufficiency, so the purpose of a voluntary association for the control of tuberculosis is to develop as far as possible individual power of self-defense.

When legislatures and councils have been taught their duty and have assumed it, the utility of such an association as that just formed in Maryland will be no less than it is at present, and its activities will as certainly continue as this generation will give place to another. We shall never have done with Koch's infinitesimal plant, but in the control of its harmful activity we shall have increasing profit, and shall enrich our children and our children's children.

FLIES AND TUBERCULOSIS.

It has long been known that living tubercle bacilli are present in the excreta of flies fed upon tuberculous sputa, and that the bacilli in dried fly-specks may remain virulent for a short time. A study by Frederick Lord of the relations of the excreta of flies to the transmission of tuberculosis appears in the *Boston Medical and Surgical Journal* for December 15, 1904. He finds that flies fed exclusively on human sputa, whether tuberculous or not, die in a few days; when fed on tuberculous sputa the tubercle bacillus is found in the intestines within 18 hours. It appears that the bacillus multiplies in the intestinal canal of the fly, but its activity is restricted to the intestines. In the digestive tract of the fly the bacilli increase about 15 times (in sputum 10 organizations per field, in the excreta 150 per field). Guinea-pigs inoculated with tuberculous flyspecks one day, eight days, and fifteen days old became tuberculous. Excreta 28 and 55 days old were inoculated into guinea-pigs without result. Of the three tuberculous animals, only one had generalized tuberculosis—that inoculated with the freshest excreta. The doses employed were quite large—100 flyspecks, or about 500,000 bacilli. It has been a common mistake, as we think, to use too large doses in the experimental study of tuberculosis.

A guinea-pig was imprisoned for eight days in a box supplied with a constant current of air entering the chamber through a glass cylinder in which 23 flies and a quantity of tuberculous sputum had been kept for three days. At the end of 12 weeks this animal showed at autopsy no trace of tubercu-

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losis. The author concludes from this experiment that the tubercle bacilli in excreta are not likely to be distributed by currents of air. Dr. Lord believes that the danger of infection through agency of flies lies in the ingestion of food contaminated by the infected excreta of flies, though he did not in the present study consider it desirable to feed animals with such excreta. It seems to us that the feeding experiment should have been preferred to that of inhalation. If the inhalation experiment had produced a tuberculosis, the result would probably have been added to the already enormous, and perhaps misleading, mass of evidence, which suggests the idea that the deeper air passages offer the most favorable atria for tubercular infection. The ingestion experiments are less numerous, but have no vice of ambiguity.

Dr. Lord's paper adds important data to the accumulated proof that flies are effective agents in the transmission of infectious diseases, and his suggestion that tuberculous patients and their infective excreta should be carefully screened against flies is but one of many reasons for the more general use of insect-barriers about the sick.

THE ERA OF IMPROVEMENT IN BALTIMORE.

If the excellent and very elaborate plans of Mayor Timanus for the improvement of Baltimore include adequate provisions for the sanitary needs of the city, these most expensive of the necessary reforms are strangely neglected in public discussion. It is said that we shall soon have a municipal hospital for infectious diseases. Let us hope that it is true. No civic necessity of equal value can be had at as small a price.

There is a committee on water, which we hope will consider the responsibility of a great city for the consequences of failure to provide reasonable defenses against water-borne disease. Judged by the easy standards of American cities, our delinquency in this respect is perhaps not very glaring, but American standards are advancing, while we are not even marking time. A few years ago the question of filtration was indefinitely postponed because we had a prospect of engaging the greater problem of a sewerage system. This was for the time being a wise disposition of the water question. But the drainage of the city is no better, nor is it certain that the extraordinary opportunity provided by the great fire will be turned to advantage in the immediate construction of a portion at least of that complete modern sewerage system which a year ago we recognized as Baltimore's paramount necessity. A few days ago on a trolley car the writer overheard a group of theatrical people commenting on the appearance of Centre street near Washington Square. It was characteristic of Baltimore, and reminded them strongly of New Orleans. Baltimoreans hearing their remarks must have felt flattered by the comparison of their city to the poorly-ditched town on the lower Mississippi.

One cannot traverse the burnt district today without acknowledging the excellence of the work done by the Emergency Committee and the Burnt District Commission. The mayor's recent action has given a tremendous impetus to the forward movement, and his call for the services of distinguished citizens has met with splendid response. Perhaps their enthusiasm will carry their work beyond the lines blazed out last February and include the whole city with all its needs.

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Medical Items.

SURGEON, PHYSICIAN, PHARMACIST, HOSPITAL INTERNE, TRAINED NURSE FOR PANAMA CANAL.

The United States Civil Service Commission announces an examination on January 18, 1905, to secure eligibles from which to make certification to fill vacancies in the following-named positions under the Isthmian Canal Commission on the Isthmus of Panama: Surgeon, physician, pharmacist, hospital interne, trained nurse.

The scope and character of these examinations are as indicated below. Each applicant for the Isthmian Canal Service will be required to submit to the examiner, on the day he is examined, a recent photograph, not more than three years old, of himself, which will be filed with his examination papers, as a means of identification in case he receives an appointment. An unmounted photograph is preferred. The date, place, and kind of examination, the examination number, the competitor's name, and the year in which the photograph was taken should be indicated on the photograph. For further information concerning transportation to the Isthmus, conditions of employment, etc., attention is called to Form No. 1417 inclosed herewith.

Surgeon.—Age limit, 25 to 50 years; salary, $250 per month.

The examination will consist of the subjects given below, with the relative weights indicated:

	Subjects.	*Weights.*
1.	Anatomy	5
2.	Surgical bacteriology	5
3.	Surgical pathology and diagnosis	15
4.	Surgical practice	40
5.	Surgical gynecology	5
6.	Practical experience. (This element will be rated upon the statements made in the application and accompanying vouchers. Special attention will be given to the quality of the applicant's experience, and applicants who have had extensive work in large hospitals will receive special credit)	30
	Total	100

It is the desire of the Isthmian Canal Commission to appoint in this position only surgeons of thorough training and wide professional experience.

Physician.—Age limit, 25 to 50 years; salaries, $150, $200, and $250 per month.

The examination will consist of the subjects given below, with the relative weights indicated:

	Subjects.	*Weights.*
1.	Letter-writing	5
2.	Anatomy	5
3.	Therapeutics	5
4.	Physical diagnosis (including questions relating to tropical diseases)	25
5.	General pathology and practice (including questions relating to tropical diseases)	25
6.	Bacteriology and hygiene	5
7.	Obstetrics and gynecology	5
8.	Practical experience	25
	Total	100

The elements of practical experience will be rated upon the statements made in the application and accompanying vouchers. Special attention will be given to the quality of the applicant's experience, and applicants who have had experience in hospitals, particularly in the treatment of tropical diseases, will receive special credit. Only those who have had extensive hospital experience and are familiar with the treatment of tropical diseases will be selected for appointment to the highest-salaried positions. Promotions may be made in the discretion of the Isthmian Canal Commission from the lower to the higher positions in this grade.

Pharmacist.—Age limit, 20 to 40 years; salaries, $900, $1000, and $1200 per annum, with board and quarters.

The examination will consist of the subjects given below, with the relative weights indicated:

	Subjects.	*Weights.*
1.	Letter-writing	5
2.	Chemistry	15
3.	Pharmacy	40
4.	Materia Medica	15
5.	Practical experience	25
	Total	100

Graduates of pharmacy only will be eligible to this examination. Experience will be rated upon the time spent in the general work connected with pharmacy, the preparation and compounding of prescriptions, and the making of official preparations.

Hospital Interne (Male).—Age limit, 20 to 30 years; salary, $50 per month, with board and quarters, provided that if appointees are retained in the position of interne after one year they will be paid $125 per month.

Only graduates of reputable medical schools having a three-year course will be admitted to this examination. It is expected that within the next few months 12 or more vacancies in this position will be filled as a result of competitive examination.

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The examination will consist of the subjects given below, with the relative weights indicated:

Subjects.	*Weights.*
1. Letter-writing (the subject-matter on a topic relative to the practice of medicine)	5
2. Anatomy and physiology (general questions on anatomy and physiology, and histologic or minute anatomy)	15
3. Chemistry, materia medica, and therapeutics (elementary questions in inorganic and organic chemistry; the physiological action and therapeutic uses and doses of drugs)	10
4. Surgery and surgical pathology (general surgery, surgical diagnosis; the pathology of surgocal diseases)	20
5. General pathology and practice (the symptomatology, etiology, diagnosis, pathology, and treatment of disease)	25
6. Bacteriology and hygiene (bacteriologic methods, especially those relating to diagnosis; the application of hygienic methods and prophylaxis, and treatment)	10
7. Obstetrics and gynecology (the general practice of obstetrics; diseases of women, their pathology, diagnosis, symptoms, and treatment, medical and surgical)	15
Total	100

Trained Nurse (Male or Female).—Age limit, 20 to 35 years; salary, $50 per month, with board and quarters.

Only graduates of schools for trained nurses having at least a two-year course will be admitted to this examination. Applicants having hospital experience in connection with the treatment of tropical diseases will be given special credit for such experience and will be preferred for appointment.

The examination will consist of the subjects given below, with the relative weights indicated:

Subjects.	*Weights.*
1. Anatomy and physiology	5
2. Hygiene of the sickroom	20
3. General nursing	20
4. Surgical nursing	20
5. Obstetrical nursing	20
6. Experience in nursing	15
Total	100

Male applicants will not be required to take the subject of obstetrical nursing. The scope of the subjects in this examination is that covered by the customary course of study in recognized training schools for nurses or in the standard text-books prepared for the instruction of students in nursing.

More than one day may be required for each of these examinations, except that for the position of trained nurse.

These examinations are open to all citizens of the United States who comply with the requirements.

Applicants should at once apply either to the United States Civil Service Commission, Washington, D. C., or to the secretary of the board of examiners at the places mentioned in the accompanying list, for Application Form 1312. The medical certificate in Form 1312 must be filled in by a reputable practicing physician. No person will be appointed for service on the Isthmus who is not physically sound and in good health. No application will be accepted unless properly executed and filed with the Commission at Washington. The exact title of the examination desired should be used in the application.

As examination papers are shipped direct from the Commission to the places of examination, it is necessary that applications be received in ample time to arrange for the examination desired at the place indicated by the applicant. The Commission will, therefore, arrange to examine any applicant whose application is received in time to permit the shipment of the necessary papers.

The following information is furnished by the Commission as to length of service, opportunities, accommodations, and privileges allowed employes and officers:

Length of Service.—Is estimated at eight years and over which will be required to complete the canal, it is expected.

Opportunities.—Promotion is promised for merit under the civil-service laws.

Medical Attendance.—Medical attendance, medicines, and care at hospitals when sick are furnished to the employes of the Isthmian Canal Commission without cost. Well-equipped hospitals will be maintained at Ancon, adjacent to Panama, and at Colon. In meritorious cases sick leave on pay may be allowed.

Accommodations for Employes.—The Isthmian Canal Commission furnishes quarters to its American employes, or, at its option in lieu thereof, commutation.

A commissary department will be maintained on the Isthmus.

Transportation to the Isthmus.—The Isthmian Canal Commission furnishes its employes free transportation to the Isthmus from either New York, New Orleans, or San Francisco, and also free return transportation upon completion of satisfactory service.

Leave of Absence.—The employes of the Isthmian Canal Commission are allowed six weeks' leave of absence annually on full pay. This leave of absence is not granted until after eight months of satisfactory service.

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DYSENTERY, WITH SPECIAL REFERENCE TO ITS BACILLARY FORM.

By Joseph J. Kinyoun, M.D.,

Glenolden, Pa.

AN ADDRESS BEFORE THE ASSOCIATED HEALTH AUTHORITIES OF PENNSYLVANIA AT GETTYSBURG, MAY 27, 1904.

DYSENTERY may be defined as an acute infectious inflammation of the mucous membrane of the intestine, chiefly affecting the colon and rectum, but very frequently invading the ileum as well. In the advanced stages there is a destruction of the mucous membrane and underlying tissues, with the formation of ulcers.

It is one of the oldest diseases of which we have a record, a rather accurate description being found of it in one of Eber's papers, 1550 years B. C. Hippocrates described this disease quite at length in A. D. 481. Herodotus also mentions it, and Galen mentions it as one of the disordered conditions of the body juices, the principal attribute being that of the bile, the liver being considered the primary seat of the disease. The latter was the accepted view held by the medical profession until the beginning of the seventeenth century, when Morgagni made post-mortem examinations of cases dead of dysentery, and found that the lesions were in the large intestine.

It was too early in the evolution of medicine to expect that they would attribute any specific cause to this disease, and it is more than probable that many diseases of the diarrheal nature were included under the terms of dysentery. We cannot, therefore, conjecture just how prevalent was this disease.

Distribution.—Epidemics of dysentery were reported in the seventeenth century occurring in India, and shortly afterwards in the West Indies. Our present knowledge of the disease shows that it occurs in nearly all latitudes, prevailing endemically in the tropics, often becoming epidemic. It also occurs in temperate climates, sometimes even in the arctic regions. It is principally epidemic during the warm months. Sporadic cases, however, may occur at any and all times of the year. Its geographical distribution may be said to be about the same as that of malaria. It

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reaches the acme in epidemic form during the warm months from July to September in north temperate and from January to March in the south temperate zone. It is also intimately associated with camp life and a follower of nearly every campaign. It is also of frequent occurrence in eleemosynary institutions, especially in insane asylums; hence the term "institutional dysentery."

Two forms of dysentery are recognized—one known as amebic and the other bacillary. The classification of the dysenteries into the acute, catarrhal, etc., really do not give anyone a clue as to their cause, as all the clinical manifestations and lesions are observed in both. One lesion, however, is observed in the dysentery caused by ameba which is unusual in the bacillary form—that is, abscess of the liver.

Lambl[1] observed certain ameboid cells in the discharges of dysentery. Lösch[2] in 1875 was first to suggest a causal relation to exist between these ameboid cells and the disease; in fact, he suspected that it was the true cause, and went so far as to make animal inoculations with discharges from cases of dysentery with apparently successful results. Koch[3] in 1883, and Kartulis[4] a year later, made extensive researches on the dysenteries in Egypt, which were confirmatory of the contention of Losch. To Kartulis, however, belongs the credit of demonstrating that these ameba were specific. He found these bodies in the majority of cases of dysentery, but did not find them in the discharges of healthy persons. Cunningham and Lewis[5] denied the specificity of the ameba, as they were unable to find this organism in all cases of dysentery, and, moreover, this same organism was claimed to have been observed by them in cases of cholera and in the discharges of healthy persons. Grassi[6] at one time held the same view as did Cunningham and Lewis, but on further investigation abandoned it. Notwithstanding these adverse opinions, the preponderance of evidence seemed to lean to the side of the ameba being the specific agent in tropical dysentery. The comprehensive and painstaking researches of Councilman and Lafleur[7] and those of Kruse and Pasquale[8] left little remaining to be said regarding the etiological *rôle* of the "ameba dysenteriae."

The clinical picture of amebic dysentery is rather diverse. It runs a very erratic course, sometimes occurring as an acute malady and followed by exacerbations, and more often assumes a chronic form. A considerable number of cases of amebic dysentery are complicated with abscesses of the liver, which may or may not be caused by the ameba. Ameba have been found in many of these cases, oftentimes in the pus from these liver abscesses. In others, according to Councilman and Lafleur, abscesses of the liver are in all probability due to a secondary infection of the pyogenic cocci.

Strong's[9] researches on tropical dysentery seem to indicate that the ameba found in his cases were specific, and were not ameba coli, as has been claimed by some writers. Schaudinn[10] has recently demonstrated the life-history of the ameba dysenteriae, and shows that its life-cycle is quite different from the ameba coli.

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In contrast with the amebic dysentery, epidemics of dysentery have been observed wherein the ameba was absent. The clinical manifestation of this form is somewhat different from that of the tropical, as it usually is ushered by a chill, the attack being sudden, the stools rapidly assuming a true dysenteric character. The disease may then run a rapid course, ending either in death or recovery. It has been stated by some that it rarely assumes a chronic form. This, however, is not in accordance with the writer's own observations on a group of cases of bacillary dysentery occurring in Manila. In these there were many which had assumed a chronic form.

It has long been suspected by many observers that many cases of dysentery were of bacterial origin, and from time to time there have been published accounts of the discovery of a number of bacteria which were claimed as being the specific cause. Chantemese and Widal[11] reported in 1880 an organism which they had isolated in a number of cases of dysentery which they termed the bacillus coli dysenteriae. Unfortunately, the cultural and other tests employed at that time were not sufficiently comprehensive as to remove all doubts as to its specific nature. Celli and Fiocca[12] later made a similar claim for a bacillus which thye found in cases of dysentery occurring in Rome. It remained, however, for Shiga[13] in 1898 to positively identify a bacillus as the cause of acute epidemic dysentery of Japan. He reported a case of dysentery occurring in Tokio during the summer of 1897, from which he isolated an organism by special cultural and agglutinating tests which left no doubt as to its being intimately connected with the disease. He found that when this organism was isolated in pure culture and mixed with a quantity of serum from a convalescent case it would agglutinate in the same manner as has been observed in the Gruber-Durham test (Widal) for typhoid fever. Animal inoculations demonstrated that the organism was quite pathogenic, causing an acute septicemia in the smaller animals. Monkeys inoculated with this organism by feeding caused the typical lesions of dysentery.

Since Shiga's announcement the investigation has been undertaken again with renewed interest, and with the result of adding considerable to our knowledge both as to its pathology and its distribution. It has been identified in Japan by Shiga, in Manila by Flexner and Strong, in Italy by Celli, in France by Valliard and Dopter, in Germany by Kruse; also in cases returning from Indo-China, India and Porto Rico, and a few cases have been reported from Central America and the West Indies.

Vedder and Duval[14] have made an extensive study of this disease in the United States, and they conclude that it has a wide distribution. There can be now but little doubt that the epidemics of dysentery occurring during the late Civil War were of the bacillary form. It is more than probable that nearly all these cases were of the bacillary origin, because the records of the post-mortem examinations made of cases of soldiers dying of dysentery

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during this period very few cases of abscess of the liver were encountered.

Varieties of the Dysentery Bacilli.—It was formerly believed by Shiga, Kruse, and others that the Shiga bacillus was the true cause of dysentery, and other bacilli, although closely resembling it, but varying in several slight particulars, were only secondary to the infection of the dysentery bacillus, and were to be considered saprophytic. But a further investigation of these has shown the original claim of Flexner to be correct. The dysentery bacillus isolated by him from cases occurring in Manila differed considerably in their cultural characteristics from those of the Shiga type. Hiss and Parke have also added much to the solution of this point, as many of the organisms isolated by them from dysenteric stools during the past summer were shown to differ considerably in their cultural characters from the Shiga bacillus, and were causative of the disease. The dysentery organisms, therefore, fall into two groups—one, the Shiga, which does not ferment mannit or produce indol, and the other ferments mannit, forming indol, and, further, some of these ferment maltose and saccharose. The agglutinating properties of these two main groups also differ one from another. Parke has suggested that the acid group, which ferments mannit, saccharose, and maltose, the name of "para-dysentery bacillus" be given it in contradistinction of that of the true type.

Morphology.—The bacillus of dysentery is a short and slender rod with rounded ends from one to three microns in length and half a micron in breadth. It resembles very much that of the typhoid bacillus. Shiga claims that it possesses slight motility, whereas Flexner, Kruse, and others claim the contrary. The question whether the organism has cilia is also in dispute. It does not produce spores, is easily stained by the aniline dyes, but not by Gram's method. The range of temperature is from 18° to 37° C., but it grows best at the latter. Its growth in bouillon causes a cloudiness after 12 to 15 hours, being slightly heavier at first at the surface, but latterly it falls to the bottom, giving a slight precipitate. If grown in peptone bouillon rendered slightly alkaline, the Shiga bacillus at first clouds it uniformly after a few days, the growth falls to the bottom, leaving the bouillon almost clear, whereas, on the other hand, all the acid group (mannit-fermenting) cause a heavy growth, a large precipitate, and cloudiness, which persists. It does not liquify gelatine. Streak cultures on agar show it to be a moist, gelatinous, whitish growth, slightly opalescent. The colonies on both gelatine and agar are slightly raised, moist in appearance, the edges being smooth. Viewed by transmitted light, the colonies have a slight opalescence of bluish tinge resembling very closely those of the typhoid bacillus. The bacillus grows somewhat more slowly than does the colon bacillus. It does not produce gas in any of the media containing sugars, and, as a rule, it does not produce indol, and if so, only to a very slight degree. Peptone bouillon containing litmus solution and

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1 per cent. mannit sugar is not acted on by the Shiga bacillus, but this media is changed by all those of the acid group. This test is considered the best for differentiating these two groups.

Motility.—Shiga, Flexner, and others state that the dysentery bacillus is non-motile. Some strains when freshly isolated from the case appear non-motile, but on further subcultures it may assume motility, and on further cultures this may disappear.

Agglutination.—The serum of convalescents of bacillary dysentery, as well as those animals experimentally inoculated with either dead or living cultures, agglutinate the bacillary bacillus even in high dilutions. The serum of animals inoculated with the dead or living cultures show some variations in the agglutinating property which are worthy of mention.

For example, if the guinea-pig is inoculated with dead and living cultures of the non-acid group (Shiga), it will agglutinate the Shiga bacillus in higher dilutions than any of the acid-producing groups, and, conversely, animals immunized with the acid-producing groups will agglutinate its bacilli higher than the Shiga group. Thus these serums will cross-agglutinate, but never in such high dilutions as with its own organism. The same may be said about the immunizing properties of the serum. The serum of an animal immunized against the Shiga organism will show a greater protective property than against the acid-producing type, or conversely. If the animals are kept under an active immunization for several months with either the acid or non-acid type, it will be found, on applying an experiment known as "salting out" the specific agglutinins, there will be left certain others which will agglutinate on both the acid and non-acid types like common agglutinins.

It appears from the researches of Parke of New York and those of ourselves that after animals are immunized for a period of several months there commences to appear within the blood of these animals common agglutinins which, as a rule, are slightly less than the specific agglutinins. The specific immune body aforementioned now becomes a common immune body, the serum protecting quite well against both the non-acid and acid groups.

It is well, then, to bear in mind that in making the agglutinating test with the blood of a patient, or in isolating the organism from the stools of such patients, to employ both strains of the organism as controls. The agglutinating test should be made with great care, and unless this is done the results may be misleading. Many of the domesticated animals, such as the horse, sheep, goat, rabbit, and dog, will agglutinate certain strains of the dysentery bacilli in fair dilutions, as in 1 to 20, and sometimes as high as 1 to 40. It is therefore always best when employing such alien immune sera for the identification of the organism to have them largely diluted. The same also applies, but less so, to human serum. Pillsbury[15] during the last year found that the blood of healthy infants sometimes agglutinated the several strains of the dysentery organism when employed in dilutions of 1 to 10, but above this dilution it

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was not observed. He therefore concludes that it is important in applying the agglutinating tests to have the serum well diluted.

The antidysenteric serum does not have any agglutinating effect upon the typhoid, paracolon or hog-cholera bacilli. Parke, however, has found that there is a group of colon bacilli isolated by him, some from cases with dysenteric symptoms, which agglutinated almost as well as the dysentery bacillus. The only way of differentiating such an organism would be by the employment of the suger-fermentation test.

Another fact is that the agglutinins may remain for a long time in the blood of a person recovering from dysentery. In fact, the phenomena is parallel to that observed in cases recovering from typhoid fever. The writer has observed cases which gave a history of acute dysentery as much as a year before, and whose blood gave a prompt agglutinating reaction in dilutions of 1 to 100.

Pathology.—The pathological lesions observed in adults induced by the infection of the dysentery bacillus, either of the Shiga or Flexner type, appear to differ in nowise one from another. The lesions observed in adults are, as a rule, more superficial than those caused by the ameba dysenteriae. The autopsy reports of Flexner[16] and Strong[9] of cases in Manila show that the lesions consist in the swelling, congestion, hemorrhage into the mucous membrane, and occasionally slight exudations are met with. "The changes appear in the mucous membrane, submucosa, and muscularis, being most marked in the former situations. Those of the mucous membrane consist of coagulative necrosis, with exudation of fibrin and polymorphonuclear cells. The pseudo-membrane is a close-meshed network of fibrin enclosing multinuclear, often fragmented cells. The submucosa is always much altered. Here are found hemorrhages of variable sizes, while in the interstices of the tissue some fibrin appears. More marked, however, are the cellular accumulations which are present not uniformly, but in irregular areas. The character of the cellular exudate is quite uniform. Excluding the red-blood cells, the new cells consist chiefly of plasma cells. In the submucosa infiltration hemorrhage and fibrin formation take place also beneath an intact, or almost intact, mucous membrane. The muscular coat shows only hemorrhages. The peritoneal tunic is usually unaltered."—Flexner. The bacilli are abundant in the fibrinous exudation and in the areas of coagulation necrosis, which consist of bacilli and cocci of several varieties. The various bacilli and cocci are also mixed with these, but, as a rule, more superficially situated than the dysentery bacillus.

The lesions observed in children may be classed in two groups—the severe and mild. In the mild cases the liver was usually greatly congested, accompanied with fatty infiltration; the kidneys congested with considerable degeneration of the epithelia; the spleen congested; hypostatic pneumonia is occasionally seen, the peritoneal cavity infrequently contains a cloudy serum, and here and there between the laps of intestines may be found delicate bits of

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fibrin. The peritoneum is not, as a rule, congested, but it has lost somewhat its normal shiny appearance. The mucous membrane of the small intestine appears normal, save the slight swelling of Peyer's patches and solitary follicles. On the other hand, the large intestine shows most extensive changes, being most marked at the lower end. The wall of the sigmoid and rectum is much thickened. The mucous membrane of the sigmoid often loses its normal smooth appearance, and is interspersed here and there with granulated areas, around which there is a marked congestion. The mucous membrane of the sigmoid and rectum is covered with a grayish pseudo-membrane that strips off with difficulty, taking with it all the structure down to the thickened submucosa. The mesenteric glands are, as a rule, swollen and much congested.

A bacteriological examination made either from the areas of coagulation necrosis or from the mucous membrane showed it to contain both bacilli and cocci, the bacilli resembling those of the colon type, which on further examination the dysentery bacillus could be isolated.

In the second group there are extensive tissue changes more pronounced than those of the first, together with certain changes which accompany the terminal infections. The mucous membrane of both the large and small intestines appear to be in good condition, except with regard to the lymphoid elements. The Peyer's patches are enlarged, containing superficial ulcerations, and the mucous membrane around them is slightly thickened. The solitary follicles are dimpled. This condition may be confined only to the large intestine, but it is not infrequently observed through the whole of the large and small intestine. The changes occurring in the lymph follicles, both agminated and solitary, consist of a hyperplasia. This hyperplasia is lymphoid in most cases, occasionally endotheloid. There is usually a denudation of the epithelium from these follicles and more or less exudation of the follicles themselves. In some of these cases the extensive changes in the mucous membrane alone would be a sufficient cause of death, but in addition to this many cases present the lesions which accompany the terminal infections. These in themselves may be sufficient for the cause of death. "Infections of the dysentery bacillus exhibit a most diverse pathological anatomy. The gross microscopical changes of the extremes of these cases are so different that at first sight it would seem scarcely probable that they are caused by the same micro-organisms."—Howland.[17]

The clinical history of many cases of cholera infantum justify the lesions which are found. Many cases are mild and recover under a very small course of treatment, whereas others do not. Where there are profound structural lesions present or an intercurrent infection it can be readily seen that this brings about a different condition than where the lesions are only superficial and mild in character.

The lesions in dysentery must be considered first—those that are caused by the dysentery bacillus *per se* upon the mucous mem-

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brane, and those which follow, which are caused by agents other than the dysentery bacillus. In summing up, it appears that the lesions caused by the dysentery bacillus may comprise all those encountered in the several grades and types of infantile diarrhea. No particular type is distinguished from others by a special etiological origin.

Bacillary dysentery may be both acute and chronic. It may persist in the chronic form for months, and even as long as a year, and it may be also associated with the amebic form of dysentery. It is not such an easy matter as one would be first led to suppose to isolate the dysentery bacillus from the dejections. It has been pointed out by Shiga that during the first few days of the disease the organism is present in large numbers.

Sometimes the organism is present in almost pure culture, but soon after this other organisms appear to preponderate and overlap the dysentery, so that it is almost next to impossible to isolate it within a reasonable time. The best method that has been found is to procure a specimen from the discharge immediately after the passage, and select from this small particles of mucus, which is rinsed for a considerable time in sterilized salt solution to free it as much as possible from extraneous bacteria. Then an emulsion is made of this small bit of mucus in peptone bouillon, which is further diluted and plated in the ordinary way. It is then incubated for 12 to 24 hours, the plates are then examined, the colonies which first appear marked, and then the plates are again incubated for another 12 hours, and those colonies which have developed during this time are transferred to several media and tested for its agglutinating and other reactions. From the above it would appear to require at least 48 hours before the organism could be isolated. This time is far too long to wait before determining the therapeusis, this being one of the greatest drawbacks. The agglutinins sometimes appear very quickly after the initial attack. It has been observed even at the end of 48 hours, but usually between the fifth and tenth day, and in that respect it is very much like that of the typhoid condition, and cannot, therefore, be depended on as an aid in the diagnosis.

In addition to the agglutinins there also appears in the blood of the convalescents from dysentery and animals inoculated with the dysentery organisms certain lysins which act directly upon the bacilli. For example, if to a given quantity of culture there is mixed a certain amount of immune serum, and then afterwards a fresh complement, either human or alien, there is a marked bacteriolysis. Gay[18] has demonstrated that the immune serum produced from the non-acid group (Shiga) is far more bacteriolytic to the Shiga organism than to the acid-producing group, or *vice versa.* He puts forth that as one of the tests in differentiating between the acid and non-acid producing groups of the dysentery bacillus.

(*To be continued.*)

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PATHOLOGY OF EPILEPSY.

By Wm. Rush Dunton, Jr.,

Assistant Physician, Sheppard and Enoch Pratt Hospital, Towson, Md.

READ AT A SYMPOSIUM ON EPILEPSY BEFORE THE SECTION ON NEUROLOGY AND PSYCHIATRY, JANUARY 11, 1905.

In the study of the pathology of epilepsy we are struck very forcibly with the paucity of results which have been obtained after years of research. A great many of the reported pathological changes have not been confirmed by further observation, so that our knowledge of the pathology of this disease still remains comparatively meager. Possibly the suggestion of Binswanger that epilepsy may have its origin in appreciable anatomical changes—changes in the nerve-cells which cannot be demonstrated, or in irregular and evanescent changes in the metabolism of the nerve-cell—truly describes existing conditions. Certainly his suggestion has the advantage of explaining all cases, but it lacks definiteness.

Among the most recent papers on this subject are three by Drs. L. Pierce Clark and Thomas P. Prout, one forming the chapter on the "Pathology of Epilepsy" in Dr. Spratling's book; another entitled "The Problem of Epilepsy: Some Suggestions for Its Solution," read before the National Association for the Study of Epilepsy in November, 1902, and published in the *Medical Record* for February 14, 1903, and a third paper on "Status Epilepticus," published serially in the *Journal of Insanity*, for which these writers received the Stevens triennial prize. In this latter all of their conclusions are more carefully elaborated than in the two previous papers. As these do not vary greatly from their conclusions as stated elsewhere, we may adopt the summary as given in Dr. Spratling's book as representing the sum total of their findings. In this the chapter on "Pathology" is divided into four heads—I. Gross Pathology; II. Microscopic Pathology; III. Pathogenesis; IV. Clinical Interpretation of the Present Pathologic Status of Epilepsy. Tonight I will discuss only the first two headings.

Under the first head it is stated that the "range of gross anatomical states found in epilepsy includes almost every possible lesion of the cerebro-spinal axis, its membranes and their bony covering," and that these gross lesions occupy a secondary place in its causation—so secondary, I think that they may be dismissed very summarily from our consideration when we remember how frequently gross lesions exist without any coexistent epilepsy, though exception must be made to certain cases of focal epilepsy. Even the condition of atrophy and maldevelopment following infantile cerebral palsy, to which some importance is ascribed by

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these writers, is to some degree discounted, I think, by their statement in discussing this condition that "in the production of epilepsy the size of the lesions appears of little consequence compared with its location."

At the last meeting of the American Medical Association Dr. Onuf, who is pathologist at the Craig Colony, read a paper summarizing the gross lesions found post-mortem in the brains of a number of epileptics, and laid especial stress upon the fact that a change was found in the thalamus in a number of cases.

I am of the opinion that in a study of the gross lesions there is little progress to be expected in our knowledge of the pathology of epilepsy; so much has been done in investigating these gross lesions and so little has been established. In 1810 Wenzel came to the conclusion that the pituitary body was the only part of the encephalon presenting any uniform lesion. This statement was based upon a study of 20 cases, and it seems hardly necesary to mention that it has long since been disproved. I am of the opinion that any statements relative to the existence of a single gross lesion in epileptics may be dismissed unless accompanied by irrefutable proof from several observers.

The conclusions to the chapter on pathology in Dr. Spratling's book are as follows:

1. Epilepsy is a cerebral disease attended and followed by profound and diffuse cortical degeneration.

2. The morbid changes concern chiefly the destruction of the nuclei of the cells of the sensory type from which the primary departure of the disease originates. Its terminal pathology is a progressive gliosis more or less marked and diffuse.

3. Epilepsy is essentially a sensory phenomenon with a motor manifestation.

4. Its etiopathology rests with a variety of toxic or autotoxic agents not as yet definitely isolated or determined.

5. The disease is grafted upon a cortical organic cellular anomaly, which is induced largely by a faulty heredity, the exact anatomic nature of which is not known.

The first statement that "epilepsy is a cerebral disease attended and followed by profound and diffuse cortical degeneration" may be accepted, for while exception will be made to some of the statements relative to the character of these degenerations, it must be admitted that in cases of epilepsy there is a marked increase of neuroglia fibers, which is general, as indeed is stated as a secondary part of the second conclusion, and this gliosis necessarily implies a degeneration.

With the first part of the second conclusion, that "the morbid changes concern chiefly the destruction of the nuclei of the cells of the sensory type from which the primary departure of the dis-

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ease originates," I think exception must be made for the present. The destruction of the nuclei referred to is a so-called granular degeneration of the karyoplasmic network of the nucleus, which allows the easy abstraction of the nucleolus in section-cutting. It is on this artefact that the bulk of evidence for this statement lies, and I think that when we have to rely on artefacts for proof of histological changes we are placing our deductions upon an exceedingly precarious foundation. The granular degeneration of the nuclear karyoplasm is not well described, and the illustrations which accompany the major article are so poor that practically they show nothing. An illustration to understand which we have to rely upon the legend may be said not to illustrate.

In regard to the artefact, while Clark and Prout state that normal brain tissue was treated precisely like that from the epileptic cases, and showed this artefact 137 times less frequently than did the tissue from the cases of status, no definite statement is made regarding the sharpening of the section knife, which would seem to be an extremely important factor in the production of this artefact. Several of those with whom I have discussed this finding, like myself, feel skeptical as to its reality, and while it must be admitted that Clark and Prout have tried to do their work carefully, it appears strange that such an apparent alteration should have been overlooked by men like Mott and Alzheimer.

Further, the statement regarding the invasion of the cortex by leucocytes is one which is open to much debate, but the opinion now held by a number of neuropathologists is that leucocytes do not invade the cortex and have no phagocytic function here. When found in connection with nerve-cells their presence is merely accidental. Many will admit, however, that glia nuclei are frequently found about a nerve-cell when the latter is diseased, and will ultimately replace it.

The statement that the cells of the second layer, or small pyramidal cells, are sensory in character is based on a hypothesis of Hughlings Jackson's and on certain experimental work of Prus, and is not clearly proven, but that the epileptic attack owes its origin to sensory irritation, and that the cortex of epileptics is in some way peculiarly susceptible is the opinion of a number, Gowers among them, and there seems a possibility of the irritating factor being toxic or autotoxic in nature, so that Clark and Prout's third and fourth conclusions may be accepted. The fifth may be expressed more briefly by saying that there exists in epilepsy an hereditary diathesis.

Somewhat more satisfactory, is seems to me, than the above results are those of Jolly as given in Flatau and Jacobsohn's "Pathologische Handbuch." Jolly reaches the following conclusions:

1. In the brains of epileptics, dating from childhood, are ob-

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served glia proliferations, doubtless due to an original developmental anomaly.

2. Other glia proliferations, especially the irregularly-distributed processes with marked cell increase, are associated with encephalitic processes which date in the majority of cases from childhood.

3. Similarly, in cases in which the epilepsy develops in later life as the result of focal disease, glia proliferation occurs most markedly in the neighborhood of such foci.

4. Epileptics, both early and late, tend to show an increase in the glia mesh and the nuclei in proportion to the decrease in intelligence.

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It is therefore conceivable that the glia proliferation is in many cases a secondary one, due to the epileptic seizures; in other cases is the sequela of focal diseases, and in a few cases is the expression of abnormal development.

Jolly speaks of changes in the ganglion cell, being acute, in cases dying in status (these changes consisting in an increase of "round cells" about the ganglion cell, which may be disintegrated), and chronic, where we find atrophy and sclerosis of the nerve-cell. It will be noted that there is a very unsatisfactory indefiniteness about this term "round cells." We do not know whether Jolly has any opinion as to the nature of these cells or not. He says that in any case of extensive change in the cortex the order of the ganglion cells is disturbed "as well as the lamination, but states that it has not yet been proven that there is any superficial cell change in epilepsy or any definite location of the lesion which is characteristic." Jolly concludes with the statement that with epilepsy having its onset in the senium arteriosclerosis is probably always associated, and refers to a case of Kussmaul's in which arteriosclerosis with occlusion of both vertebral arteries and of one of the carotids was present, and in which epileptic convulsions could be artificially produced by pressure on the other carotid.

It will be noted that Jolly rather avoids discussing any primary histological changes beyond stating that gliosis may be primary, that arteriosclerosis is an etiological factor, and that the arrangement of the cells may be disturbed. This last I have seen in several cases of Jacksonian epilepsy, and the condition is referred to by a number of writers.

We may conclude, therefore, that the pathology of epilepsy is as yet not definitely established, but that a neuroglia increase is undoubtedly present in all cases, but whether sometimes primary or only secondary cannot yet be positively affirmed. So far specific changes in the ganglion cells have not been definitely established.

THAT which is good to be done cannot be done too soon, and if it is neglected to be done early it will frequently happen that it will not be done at all.—*Bishop Mant.*

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Current Literature

REVIEW IN SURGERY.

Under the Supervision of Hugh H. Young, M.D., of Baltimore,

ENURESIS IN CHILDHOOD. Maurice Ostheimer, M.D., and I. V. Levi, M.D. *Journal of the American Medical Association,* December 17, 1904.

Experience has taught that incontinence of urine, while not uncommon in adults, in women especially is constantly noted in institutions for the treatment of children. The authors found that about 5 per cent. of the children treated at the dispensary of the University Hospital, Philadelphia, manifested this condition. Out of the series of 90 cases reported, incontinence occurred at night only in 53 cases, was both diurnal and nocturnal in 35 cases, and was diurnal only in 20 cases. In the greater number of cases the enuresis persisted from infancy. In the so-called "secondary" cases the condition was in many instances first noticed after some debilitating illness. The writers have obtained excellent results by their method of treatment, 75 per cent. of the cases being reported as cured. In every case an attempt was made to correct errors in diet. No liquids were permitted after supper, and the fluid taken at that meal was limited to one glassful. Cold sponge baths of two minutes' duration, followed by vigorous rubbing, were ordered daily on rising, and associated conditions, as gastro-intestinal or pharyngeal catarrh, otitis, eczema, worms, etc., were given special attention. If the urine was hyperacid, potassium citrate was given. In all the boys the foreskin was stripped back regularly and adhesions freed when this was possible. When there was phimosis circumcision was advised. Tincture of belladonna was first prescribed in ascending drop doses, beginning with three drops three times daily and increasing one drop a day up to 10 or 15. If the tincture of belladonna failed to control the enuresis, aromatic tincture of rhus was tried. If this also failed, a solution of strychnine and atropine was given, and the dose gradually increased until symptoms of the physiologic action of the drug appeared or the enuresis ceased. Electricity was tried in a number of the cases without any apparent success. The average duration of the treatment in the cases which recovered was a little over five weeks. Although epidural injections were not used in any of the cases, they advise it where negative results have been obtained with their plan of treatment.

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THE ILIAC EXTRAPERITONEAL OPERATION FOR STONE IN THE LOWER URETER IN THE MALE. H. A. Fowler, M.D. *Annals of Surgery,* December, 1904.

The comparatively short time since removal of stone in the lower ureter in the male has been considered feasible, and the relatively small number of such cases reported, makes the addition of two further cases successfully operated upon of considerable interest.

Case 1, age 36 years. When 11 years old had first attack of severe pain in left kidney region. Since then has had no further pain, but repeated attacks of hematuria. Following his last attack of hematuria he had marked symptoms of vesical irritability which lasted for several days. All examination except the cystoscopic was negative. The cystoscope showed atrophy of the left ureteral orifice and distinct atrophy of the left side of the trigone. The left ureter was not functionating, and introduction of ureteral catheter met with an impassible obstruction 4 cm. from the ureteral orifice. Subsequent radiographs confirmed the diagnosis of calculus at the above point.

An extraperitoneal iliac urethrolithotomy was done, the stone bearing portion of the ureter being easily exposed. After removal of the stone the incision in the ureter was closed and a strip of gauze inserted down to the ureter. The wound healed perfectly without any leakage of urine.

The second case was that of a man aged 32 years. For 22 years he had suffered off and on from attacks of colic in the right kidney region. During the last attack the pain was localized in the penis. During late years increased frequency of urination and urethral symptoms were marked. This frequency increased to such an extent and the condition became so distressing that it was for this symptom that the patient sought relief. Examination wsa practically negative, including the cystoscopic, but the *x*-ray showed a stone in the lower portion of the ureter.

The stone was successfully removed by the extraperitoneal iliac route as in the first case, the incision in the ureter being sutured. Wound healed without leakage of urine.

The symptoms of vesical irritability in both cases are noteworthy, leading in both instances to a search for vesical calculi. The prominence of vesical irritation also in other reported cases leads Dr. Fowler to believe that when kidney colic is associated with bladder symptoms it suggests strongly stone in the lower ureter. The writer calls attention to the necessity of recognizing these cases before the destructive kidney changes take place, as so often occur.

Once a stone has remained impacted in the lower ureter any length of time the chances of being finally passed into the bladder are remote. Fowler has collected 24 cases of stone in the lower ureter operated upon. With regard to choice of operation, the extraperitoneal route is undoubtedly the best method of reaching and extracting calculi from the lower portion, as it has generally been held to be for the upper three-fourths. It permits examina-

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tion of the entire length of the ureter and the kidney pelvis, which should never be neglected, as other calculi or a stricture of some portion of the canal may be present. The method combines so small a risk with so great a technical simplicity that the mortality should be even less than for nephrolithotomy. Calculi in the intravesical or intramural portion of the ureter are best reached by the suprapubic intravesical route, but those impacted in the juxtavesical and paraischial portions should be removed by the iliac extraperitoneal route.

* * *

UNDESCENDED TESTICLE. Walter B. Odiome, M.D., and Channing C. Simmons, M.D. *Annals of Surgery,* Decebmer, 1904.

This condition merits prominence on account of its comparative frequency and importance from a surgical standpoint. There exists a wide variance in the opinion of surgeons as to the proper method of treatment and of pathologists as to the significance of the condition. The writers' paper is based on a study of 77 cases.

The terms undescended testicle and ectopia should not be confounded. In the former the organ has been arrested in its normal course of descent and the latter is used to designate a malposition of the organ which in its descent has deviated from the normal course.

The frequency of undescended testicles in adults is difficult to accurately compute, but the most reliable statistics would seem to indicate an occurrence of one in every 900. These figures are probably a little too low. Undescended testicle is, of course, much more frequent during childhood. Various authorities place the limit of age, after which descent is unlikely to occur, from the first to the fourteenth year, the chances of descent becoming much less with each succeeding year.

The precise cause of arrest of the testicle in its normal descent is difficult to determine, but it is invariably due to some defect in development during fetal life. Heredity has been considered as an etiological factor, but the writer considers it of little consequence. An undescended testicle may be classified according to the position which it occupies, as an abdominal inguinal, pubic or pubescrotal retention. One variety may, however, readily pass into another. The inguinal variety is by far the most common, occurring in 51 cases out of the 77 cases reported, and is most prone to the various complications and inflammations. The comparatively fixed position makes it impossible for it to escape the force of blows, while the sudden and violent contraction of the abdominal muscles, by pressure on the testicle in the canal, is often a cause of most painful and severe inflammation. These attacks may recur with such frequency as to incapacitate the individual for his work.

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An undescended testicle is almost invariably imperfectly developed as regards size, consistency and minute anatomy, and it is agreed by all observers that such a testicle is incapable of the formation of spermatozoa in a great majority of cases. Occasionally in undescended testicles the function of spermatogenesis is established for a time, but it persists for only a brief interval of years and then is lost. All double cryptorchids who have been reported to be the fathers of children have been very young men.

An individual with one testicle normally developed and situated in the scrotum is in no way affected as to the bodily development and the power of procreation. As regards complications, inguinal hernia is by far the commonest, with the exception of attacks of inflammation. It occurred in 57 per cent. of the writers' series. Corner has stated that a hernial sac is to be found in 70 per cent. of the cases.

Inguinal hernia is more apt to become strangulated when associated with arrested testicle. Torsion of the spermatic cord is not an uncommon complication. Operative interference is always indicated, and orchidectomy is usually necessary. The liability of the undescended testicle to become the seat of sarcomatous degeneration is of great importance, about 12 per cent. of the cases of malignant diseases of the testicle being in those abnormally placed. Metastases, as a rule, occur early, and death usually results within a year after the appearance of symptoms.

The treatment of undescended testicle varies according to the age of the patient, the frequence or absence of complications, and the severity of symptoms in a given case.

In uncomplicated cases without symptoms the condition can be neglected until the child reaches the age of 11 or 12 years, as up to this time there is some chance of the testicle descending spontaneously. The chance of its descending after this age is very small. Operations for transplanting the testicle to the scrotum are most frequently attended with good results at this period of childhood. In many cases the testicle by manipulation can be withdrawn from the canal and placed in the scrotum. If this is possible, gentle massage and traction should be tried daily. If hernia exists as a complication, operation is to be advised considerably earlier in life than in simple cases. No child with double undescended testicle should be allowed to reach the age of puberty without an effort being made to bring the organs to their normal position.

If the deformity is single, the importance of its correction is lessened, but in no case, single or double in children, should orchidectomy be done unless the testicle is hopelessly degenerated. No treatment is to be advised for abdominal retention. In adults with double arrest, if an attempt at orchidopexy is unsuccessful, the organ may be returned to the abdominal cavity. Orchidectomy should be done only as a last resort.

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REVIEW IN PEDIATRICS.

Under the Supervision of José L. Hirsh, M.D., Baltimore.

A Cure of Chronic Nephritis Following Renal Decapsulation. Augustus Caille. *Archives of Pediatrics,* October, 1904.

The patient is a girl seven years of age, who was four and one-half years of age at the time of operation. The child had a history of several attacks of nephritis previous to operation. At the time of entrance in the hospital she had all the evidence of chronic nephritis—urine scanty and dark, containing albumen, all forms of casts and renal elements, blood, and pus.; her eyes were puffy and her abdomen contained fluid; her heart was markedly enlarged, the apex-beat being in the sixth interspace, an inch to the left of the nipple line. Decapsulation of both kidneys was performed by Dr. Edebohls. At the operation both kidneys were of the large white variety, being three times larger in bulk than normal.

Convalescence was uneventful; primary union of both wounds. The study of the subjoined table is very instructive: it gives the urine examinations before operation, which show that in an average of eight examinations the quantity of urine in 24 hours was 700 c. c.; the specific gravity 1017; the total solids in 24 hours 27 grams; urea 8.5 grams; albumen 0.103 per cent.; hyaline, granular, and epithelial casts; few pus-cells and occasionally blood. About one month after operation an average of eight examinations showed: Quantity 750 c. c.; specific gravity 1021; total solids 37 grams; urea 18 grams; albumen 0.07 per cent.; large number of granular casts, fewer hyaline; few renal cells and pus-cells.

Examination two years after operation: Specific gravity 1021; no albumen; no casts; few leucocytes. At this time the child is in very good physical condition; no more headaches or edema.

The result of the operation is a cure; the patient's general health all that could be desired, and the urine practically normal.

Regarding the indications for operation in acute and chronic nephritis, the author states as follows: "During my professional career, now extending over 30 years, I have made the following observations regarding kidney infection: Nephritis following acute infectious disease in children has a tendency to complete recovery. Children who survive the acute stage, but continue to show albumen and renal elements for several months, also frequently make a complete recovery. In a certain percentage of cases recovery does not take place. I have records of seven of my patients who developed nephritis following scarlitina-diphtheria-measles under my personal observation and who subsequently died of kidney insufficiency—one at the age of 5, one at 6, two at

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10, one at 15, and two at the time of the first confinement after marriage at 21 and 23 years of age. In view of the uselessness of medication in chronic nephritis the proposition to treat Bright's disease surgically should be met without prejudice.

"From my observations in this case and in other cases which have come under my notice I would not hesitate to advise inspection of the kidneys through lumbar incision in cases in which an acute nephritis not secondary to heart lesions does not clear up in a reasonable time—say from six to eight months—and would further advise decapsulation of one or both kidneys should they appear swollen and enlarged, with the hope of preventing an acute nephritis becoming chronic and incurable."

Edebohls claims that his operation is beneficial by reason of an increased blood supply. This is as yet not proven. It is probable that some of the virtues of decapsulation of the kidneys are due to massage incident to handling of the infected organ.

* * *

AN INVESTIGATION OF THE INFLUENCE OF LABORATORY FEEDING ON 216 INFANTS WITH DISEASE OF THE GASTROENTERIC TRACT, WITH ESPECIAL REFERENCE TO THE WEIGHT INDEX. Maynard Ladd. *Archives of Pediatrics,* October, 1904.

The influence of laboratory feeding was studied on 216 infants with disease of the gastroenteric tract, all under one year of age. These consisted of 131 cases of fermental diarrhea, 20 cases of chronic intestinal and gastric indigestion, 18 cases of ileocolitis, 15 cases of acute gastric and intestinal indigestion, nine cases of acute intestinal indigestion, nine cases of chronic intestinal indigestion, nine cases of chronic gastric indigestion, four cases of acute gastric indigestion, and one case of severe stomatitis, which was primarily responsible for the infant's general disturbance. The acute cases were ill on the average of 17 days and the chronic cases three months before they came under treatment. They were kept upon laboratory milk for lengths of time varying from 1 to 31 weeks.

As an aid in comparing the influence of feeding upon infants of different ages and stages of development, the nutrition of each infant at the beginning and at the end of treatment was judged by the estimation of its weight development. This was calculated from the weight index, which is simply the ratio of the weight of a given infant to the weight of the average normal infant of the same age. Judged by this standard, over 50 per cent. of the cases had a weight development of only 40 to 50 per cent. when first seen. As to the results of the treatment, the series is divided into four groups:

Group 1. Cases which maintained or increased their weight index while on laboratory milk and entirely recovered from the acute gastric and intestinal symptoms for which they were brought to the clinic. This group comprised 109 cases, or 50.4 per cent. The group as a whole gained 8 per cent. in weight index, or a

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maximum average gain per week of 156 grams from the lowest weight reached during treatment.

Group 2. Cases which showed a loss in the weight indices and yet recovered from their acute gastric and intestinal symptoms and showed material gains in weight. This group includes 58 cases, or 26.8 per cent. The maximum average gain per week from the lowest weight reached was 98 grams. This was not sufficient to maintain the weight indices, the average loss of which was 3.4 per cent. This group received treatment on the average for only 5.9 weeks as compared with 8.5 weeks in Group 1.

Group 3. Cases which for the most part recovered from the acute gastric and intestinal symptoms while under treatment, but whose weight was not materially increased. This group includes 37 cases, or 17.2 per cent. The average length of treatment was 3.7 weeks, the loss in weight index 7.2 per cent., and the average loss in weight from the lowest point reached was 6.5 grams per week. Eleven cases in this group were "not improved" while under treatment. Of these, eight could not be traced, and some of them may have died.

Group 4. The fatal cases. There were 12 in number, making a mortality of 5.6 per cent. in the series of 216 cases, the results of which were known at the time treatment was stopped.

All the cases in the series were sick infants, and the results are not to be compared with those obtained in the feeding of average healthy infants. The infants were fed upon appropriate modifications of laboratory milk, usually beginning with very weak whey-cream mixtures. This milk was administered within 12 to 18 hours after the first visit and was gradually increased in strength. In one-half the cases there was no initial loss in weight following this method; in 87 per cent. of the cases the initial loss was less than one-half pound.

* * *

RECENT ADVANCES IN THE THERAPEUTICS OF PEDIATRICS. N. P. Barnes. *Medical News,* September 10, 1904.

The worthiness of this branch of medical science is the remarkable reduction in infant mortality in all civilization.

The most marked advances have been made in infant feeding. The dangers from raw milk in summer have been conclusively proven, and universal pasteurization is a most important factor in reducing infant morbidity and mortality.

Behring and Richie argue in favor of using preservatives, and place especial stress in using formalin in from 1 to 500 to 1 to 10,000. Behring claims that in these proportions formalin is tasteless and harmless, that the curdling is more flocculent, the milk more digestible, and the immune and antibodies unimpaired.

Buttermilk-feeding has been revived, and its advocates believe it to be a life-saving preparation for sick children.

The exact *rôle* of the Shiga-Flexner bacillus in summer diarrhea is still under consideration. Flexner believes that the bacillus of dysentery produces the primary lesions early, and the subsequent

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pathological change is the result of a mixed infection. This being the case, the antidysenteric serum in order to be of value must be given early before the usual mixed infection and anatomcial changes occur. Zahorsky concludes that monovalent antidysenteric serum is too uncertain for general use, but the polyvalent serum should be given in all cases of summer diarrhea.

The serum treatment of typhoid fever has received considerable encouragement from Josias, who reports 50 cases with a mortality of 4 per cent., while during the same period other cases treated in the usual manner gave a mortality of 14.2 per cent. Einhorn recommends early injections even before the diagnosis is certain. In his cases the treatment was instituted from the 9th to the 15th day. He notes the general reduction in temperature and the improvement of the sensory and nervous symptoms.

Pertussis has received its annual allotment of therapeutic agents. Arnheim makes the remarkable statement that the paroxysms are to be considered a healing process by mechanically removing the specific bacteria. Formaldehyde in from ½ to 1 per cent. solution sprayed into the pharynx once a day and calcium sulphide are the remedies receiving most attention. Manipulation of the lower jaw, according to the method of Naegli, is said to control the paroxysm in older children. (The reviewer has tried this method with little success.)

Mallory's findings of a series of bodies in the skin in four cases of scarlet fever has as yet not been verified by other observers. The presence of the streptococcus in the throats of scarlet-fever patients is still considered by many in the light of etiological relation, and the use of the antistreptococcus serum has met with success. The largest number reported by any one observer was 112 cases treated by Escherich, who believes the day not far distant when antistreptococcus serum will stand in the same relation to scarlet fever that antidiphtheritic serum does to diphtheria. A polyvalent serum, containing the antibodies of human streptococci, is the only one to be depended upon not only in scarlet fever, but in all cases where the strepcococcus plays a primary or secondary *rôle*.

Widowitz reports the use of urotropin in 102 cases of scarlet fever without a single case of nephritis. Seiffert has had some remarkable results from the employment of lumbar puncture in uremia occurring in scarlatinal nephritis. Cases with loss of consciousness and sterterous breathing recovered consciousness within 30 minutes after the operation, and subsequently recovered entirely.

The association of chorea and rheumatism continues to be emphasized. Smith uses 4 c. c. doses of the fluid extract of ergot every three or four hours in children of seven years, and continues the treatment for weeks if necessary.

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In the management of pulmonary disorders there is nothing so important as fresh air, sunshine and isolation. The potassium-iodide treatment of pneumonia is lauded by Altschul, who claims not to have had a death in 12 years out of 62 cases.

In cerebro-spinal meningitis lumbar puncture and injection of 3 to 12 c. c. of lysol after the method of Segar has proved of virtue in three cases reported by Manges. [Reviewed in MARYLAND MEDICAL JOURNAL November, 1904.]

* * *

A STUDY OF 18 CONSECUTIVE CASES OF WHOOPING-COUGH TREATED BY THE ELASTIC ABDOMINAL BELT. T. W. Kilmer. *Journal of the American Medical Association,* December 10, 1904.

This method consists in the application of a slightly-constricted belt to the abdomen of all children having pertussis. The method of applying the belt is as follows: A stockinette band is placed on a baby with whooping-cough in the same manner as is done by orthopedists before applying the plaster-of-paris jacket. This band extends from the axilla to the pubes, and fits the baby snugly. Two muslin shoulder-straps are used to prevent the band from slipping down. On this stockinette band a single width of silk elastic bandage is sewn, extending entirely around the body and covering the abdomen. This silk elastic bandage is of the same quality as that used for elastic stockings. If the child is under one year old, it will be found necessary to use but one width of this elastic bandage; in an older child two widths will often be found necessary to cover the entire abdomen. This silk elastic bandage is pinned in place when very slightly on the stretch. After it is pinned in place it should be sewn to the stockinette band underlying it all around its entire edge. This procedure keeps the silk elastic belt flat and prevents its rolling up or becoming creased. The lower projecting portion of the stockinette should be pinned down to the outside of the diaper or other clothing, thus keeping the elastic belt smooth over the abdomen.

The benefit of the belt is seen in cutting short of the vomiting spells. The child will cough, but he will not vomit. The final results are as follows:

1. Out of 18 cases there have been but six failures to benefit cough.

2. Out of 18 cases there has been but one failure to benefit vomiting. Positive good effects on coughing is seen in 66 per cent. of cases in series.

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REVIEW IN NEUROLOGY.

Under the Supervision of Robert Reuling, M.D., Baltimore.

EPIDEMIC OF INFANTILE PARALYSIS. R. B. Wade. *Medical Record,* Vol. LXVI, No. 14.

The author reports 34 cases of what was the first recorded epidemic of this disease in Sydney, Australia. It occurred during two of the summer months. Of 34 patients, 16 were males. The ages ranged between 13 months and 7 years, nearly half the patients being between 18 and 30 months. The attack began in the majority of cases suddenly with anorexia, fever, and vomiting. Fever was not severe, persisting for four to ten days. The most prominent symptom was pain in the affected limbs; tenderness was also marked in the muscles involved, and lasted for three weeks to two months. Paralysis appeared at varying times, sometimes immediately, and varying from thence to the fourteenth day. The muscles of the limbs, which were involved in all cases, belonged to the extensor groups, namely, the trapezius, supra and infra spinatus, deltoid, triceps, and extensors of the fingers in the upper limb, and in the lower the quadriceps, peronei, and extensors of the foot. The affected muscles became limp and flabby, but wasting to an appreciable extent did not occur. A certain amount of recovery was the rule, but in every case there were some muscles or groups of muscles that showed no indication of re-establishment of function.

The superficial skin reflexes and the knee-jerks were present or not according as their corresponding muscles were or were not affected. Kernig's sign was present in three cases. During the acute attack the chief diagnostic point is tenderness of the muscles; after the onset of paralysis it is distinguished from multiple neuritis by its acute onset, lack of symmetry, and permanency of the paralysis. W. F. Litchfield saw 25 cases which he treated with warmth, massage, and measures to prevent deformity, splints being necessary in some instances.

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NOTES ON SOME UNCOMMON FORMS OF NERVOUS DISEASES. L. Pierce Clark. *Medical Record,* Vol. LXVI, No. 4.

Multiple Neuritis with Intact Reflexes. Case I.—J. S., five years old, is an imbecile, and possibly epileptic. He was born at term with instruments after a prolonged labor of 18 hours. There were scrofulous suppurating glands of the neck at six months. He only began to talk at three years of age. In 1902 he suffered from what the family supposed was gastritis, but which was probably lead colic. He recovered entirely and was well for two weeks until

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September 15, 1902, when it was noticed one morning that he was lame in both feet, and there was bilateral foot-drop. Two months after his hands became affected in the same manner, showing the characteristic wrist-drop of lead palsy. He handled lead during the two weeks after the recovery from the illness in the summer and again in September. The relatives believe his taking strong medicine during the summer had something to do with his disease, but this seems improbable from the history of treatment. At present he is in the recovery stage of multiple neuritis, apparently of lead origin. All reflexes are exaggerated; no sensory changes; great diminution of faradic and galvanic current, but not qualitative change.

Myoclonus. Case II.—B. S., 11 years old, Jewish. Two years ago, without rheumatism, heart disease or fright or other known causes, a lightning-like clonic spasm developed in the left biceps, triceps, pectoralis major, latissimus dorsi and sterno-mastoid, and in a few weeks the same muscles of the right arm also became involved. The spasm was then, as now, nearly bilateral, lightning-like, and clonic in character, occurring 20 to 40 times a minute. There were good and bad days, but there was never more than a few minutes of entire freedom from the spasm. In a few months the muscles of the pelvic girdle became involved, particularly the glutei quadriceps, the adductors, and sartorius. He had no difficulty in swallowing. There was, however, a diaphragmatic grunt. He cannot inhibit the morbid movements now as long as formerly. No spasm in fingers or toes has been observed, although of late infrequent facial spasms have occurred. The muscles first involved in the disease are now involved most. Musculature is good; no atrophy, no sensory changes; all reflexes are normal. There is marked disturbance in writing. He inhibits the spasms while writing single words. (Samples of handwriting accompany the case history.)

Paradoxical Pseudohypertrophy in Infantile Cerebral Hemiplegia. Case III.—C. W., male, 10 years old; family history of epilepsy, insanity, alcoholism, rheumatism, and tuberculosis; personal history always good; smallpox at five, and while in convalescent stage he had a relapse; septicemia set in and multiple abscesses formed. After a prolonged convalescence from the relapse infantile cerebral hemiplegia developed. The resulting convulsions were, however, general and continued for several hours. The next day after the convulsions a left-sided hemiplegia was noticed. The convalescence from the lesion was prolonged, and three months after the initial stroke he had status hemiplegicus unilateralis, attended by high fever. There were 47 *grand mal* fits in four hours. They all occurred in an order of muscular march, beginning in the left hand, the side paralyzed. He has now *grand mal, petit mal,* and psychic attacks of epilepsy every two or three months. The hypertrophy of the left calf on the left paralyzed side was first noticed three years ago. The remainder of the left side, however, remains moderately atrophic. The hypertrophy of the

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left calf is probably not true fiber hypertrophy, as the muscle action of the left leg is not so strong as the right. The amount of hypertrophy is one-half inch. Only 13 cases in all have been reported of this peculiar pathological condition occurring in infantile cerebral hemiplegia.

Myasthenia Gravis. Case IV.—Hattie S., aged 21 years, clerk, unmarried. Family history of insanity, hysteria, and tuberculosis; the cause is unknown. The "patient's face has always had a peculiar look." She had infantile rickets, and has always been rather anemic. At six years of age she had an hysterical attack, and at 13 years of age a true epileptic fit, tongue-biting, involuntary passage of urine, frothing at the mouth, etc. Syphilis and alcoholism played no *rôle* in the case. The myasthenia came on gradually. Six months before its appearance patient had frequent attacks of angio-spasm (digiti momortui). These attacks still persist and occur most frequently on exposure to cold, fright, and after great fatigue. They always appear in the "bad" days or periods. Motor weakness first appeared in the left leg. Five years ago the left leg gave way. After a slight amount of walking she fell down. In six months the right leg also became affected. For the past years both arms have also became affected. The symptoms probably first appeared in the face, but did not seriously incapacitate the patient. It was not complained of at first. Bilateral ptosis is marked, most on left side and always worse in the evening. At times diplopia comes on for a short time. There is persistent, irregular nystagmoid movements, similar to those seen in general asthenia. The facial expression is quite characteristic and reminds one of a typical case of Landonzy-Dejerine form of myopathy. There is marked inability to wrinkle the forehead, raise the eyebrows, or to frown. The sphincters of the orbit are so weak that the patient is unable to keep the eyes closed against much resistance. A very poor attempt is made to show the teeth. She cannot pout the lips, whistle, or blow out a candle. Slight bilateral atrophy of the tongue. Blood examination showed normal conditions.

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A Case of Post-Basal Meningitis Due to the Pneumococcus Lanceolatus—Recovery—Spinal Puncture. J. Porter Parkinson. *British Journal of Children's Diseases.* From *Medical Record,* Vol. LXVI, No. 4.

Patient, aged two years and two months, was admitted into the hospital with a temperature of 104.8° F., pulse of 141, and respiration 70 a minute. There were definite signs of pneumonic consolidation at the apex of the right lung both before and behind. The child was small for its age, rather fretful, and had some cough. The forehead was rather unduly prominent, and anterior fontanelle admitted the tip of a finger. General signs of rickets. The abdomen was swollen and the liver enlarged. Eleven days after admission rigidity of back and neck muscles developed, and the occiput was drawn well downward. Gradually complete opisthotonos of the

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trunk muscles supervened. The legs were rigid and extended, the arms rigid and flexed at the elbow. The forearms were pronated, while the fingers were flexed over the adducted thumb. Patellar reflexes could just be obtained, and Kernig's sign was not well marked. Slight bulging of fontanelle; ocular fundus normal. Two weeks after entering hospital half an ounce of clear fluid was withdrawn from the spine by lumbar puncture. It contained a trace of albumen. The diplococcus lanceolatus with characteristic capsules was demonstrated. After two months' illness the rigidity of muscles and opisthotonos gradually diminished. The child made a good recovery.

* * *

A CLINICAL LECTURE ON PAROXYSMAL TACHYCARDIA. James Barr. *British Medical Journal,* July 16, 1904.

On admission to the hospital the patient, a young student, gave a history of having been struck a heavy blow on his epigastrium at football. His pulse then was over 250 per minute and continued so for a week. His abdomen at the same time being much swollen, an exploratory operation was decided. It was not considered safe to give him an anesthetic, so he had a large drink of brandy, and the operation was done under cocaine. Before the operation the pulse fell to 80. A large amount of fluid was found, but otherwise the abdominal cavity was normal. Good recovery.

On January 13, 1904, he was again injured at football, and received as before a blow in the epigastric region. Barr was asked to see him, and found him very ill and with a pulse of 300 to the minute. It was thready, and, of course, not countable. Oliver's hemodynamometer showed a mean arterial pressure of 160 and an obliterating pressure of 190 mm. The right auricle extended nearly to the right nipple, though left ventricle was contracted. His liver was enlarged and tender. The author was of the opinion that the shock had caused inhibition on the part of the vagus nerve, causing dilatation of the right heart, and thus producing tachycardia. He was given five grains calomel, nitrite of amyl inhalations, a hypodermic injection of 1-50 grain atropia, and 1-50 grain nitroglycerine every two hours. In 24 hours he was practically all right, the pulse being 84, regular and strong.

Case II. E. F., aged sixteen years, errand-boy, suffering with extreme rapid action of heart. He is strong, well nourished. He ascribes the attack to overstraining from lifting a heavy load of wood up several flights of stairs. He was pale and livid, and had an anxious expression; lay flat on his back without any dyspnea. He complained of throbbing in neck; there was some tenderness on palpation of the liver, which was enlarged, reading half-way between costal border and umbilicus; no pulsation of liver detected. Apex impulse in the fifth intercostal space one-quarter-inch interval to nipple line; the right border of heart extended three and one-half inches to the right of the mesial line. Auscultation elicited 210 systoles to the minute; sounds clear; slight tremor of head accompanied cardiac systole. Blood-pressure in brachial

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artery 106 mm., obliterating pressure. After calomel, digitalin, and nitroglycerine pulse fell to 90 in four days.

Patient after leaving hospital returned in five weeks with a return of tachycardia. He confessed to having been running from the police. The symptoms are about the same as in the former attack, except perhaps a trifle more pronounced. There was considerable pain over the precordium, and he vomited several times. He was very restless and anxious. Liver two inches below costal border. After four days the pulse was still over 200; blood-pressure 125 mm. On the seventh day the pulse, however, fell to 56 a minute. In 14 days he was discharged. This patient has had in all five such attacks. The author concludes his article with a discussion on the probable cause of this form of tachycardia and its treatment.

Society Reports.

THE JOHNS HOPKINS HOSPITAL MEDICAL SOCIETY.

MEETING HELD DECEMBER 5, 1904.

The meeting was devoted to a discussion of gastric ulcer.

Etiology and Pathogenesis of Gastric Ulcer.—This phase was treated by Dr. Welch, who said he was struck with the fact that little of real importance had been added to our knowledge of the cause and development of round ulcer since the appearance of his own article on the subject 20 years ago. The subject derived interest from the frequency of the condition and the great variety of complications and sequelae, and it had been almost unique in having been treated so largely by the statistical method, the classical report being the publication of Brinton. The obvious fallacies of statistics were not, however, absent in this connection, and the frequency of round ulcer as determined by autopsy has varied largely with the care of search for it. It has been easy to overlook the scars of ulcers and to assume a round ulcer from a scar due to other causes. Large series of autopsies show either ulcers or the scars of them in about 5 per cent. of the cases. Clinically, about 1 to 2 per cent. of adults in hospitals have shown the condition, though the incidence of the disease varies with locality.

Age and Sex Incidence of Gastric Ulcer.—The statistics published some years ago had shown round ulcer to be commonest in females from 20 to 30, and in males from 30 to 40. Recent statistics had, however, tended to restrict the enormous preponderance of females, and in some instances to make the condition actually more frequent in males. Advanced life, also, had recently been shown to be less immune to round ulcer than was formerly supposed.

Etiology of Round Ulcer.—Traumatism, recently emphasized in this connection, was said to be a possible cause more often than had previously

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been thought. Orth has recently advanced a theory which makes gastric ulcer analogous to decubitus, the condition having been seen in association with spinal curvature and with gallstones, and being thought of as an actual pressure slough. No good explanation for the disease has been given, though there have been many hypotheses. It has been agreed that the presence of gastric juice is essential, for the ulcer occurs only in stomach, duodenum above the ampulla of Vater, and rarely in the esophagus. No analogue to it has been found in the body, though some have thought it similar to the corroding ulcer of the uterine cervix. Whatever the ultimate explanation, local nutritional disturbances must be present, and circulatory changes (embolus, thrombosis, arteriosclerosis, obliterative endocarditis) have since Virchow's day been thought of as causative. Such pathological changes have often been present near the ulcers, but their causal relation to them has not been proven. Klebs has advanced a theory of spasm of the vascular wall as the cause of gastric ulcer, but the theory has not become anything more than pure hypothesis. Spasm of the muscle wall, followed by ischemia and self-digestion, has also been thought of in this connection, experimental ulcers having followed section of the vagi below the diaphragm in rabbits. This work, however, when repeated by Donato gave absolutely negative results. The probability is that gastric ulcer starts in many ways, the only prime requisite being a local nutritional disturbance. The real problem why an ulcer does not heal has always remained unsolved, anemia, hyperacidity, and muscle spasm having each been cited, without good reason, as the cause of the phenomenon. Dr. Welch showed specimens of gastric ulcer illustrating varieties and sequelae of the condition.

Symptomatology of Gastric Ulcer.—Dr. Campbell Howard reviewed the manifestations of round ulcer as illustrated by the cases seen at the Johns Hopkins Hospital. Vomiting, pain, and hematemesis had been the cardinal symptoms, and had occurred in about the relative frequency usually reported. Pain was usually referred to the epigastrium. Its site bore no relation to the site of the ulcer, and it varied from discomfort to acute colic. It was rarely continuous, was most marked after meals, and was usually increased by pressure. In some patients it occurred independently of meals, but most often it was greatest after the ingestion of food, and the series exemplified the truth of Gerhard's maxim—"Those who refuse to eat because of pain have gastric ulcer." Vomiting was present in about 85 per cent. of the cases. It occurred at the height of digestion or just after the ingestion of food, and varied noticeably with the severity of the pain. In some cases it was provoked for the sake of relief. The blood vomited was usually bright red, but the coffee-ground vomitus was noted in two-thirds of the cases. In some cases fatal hemorrhage occurred without physical signs (hemorrhage foudroyante of the French). Blood, Dr. Howard said, would be found in the stools more often if more looked for. Nausea was usually absent. Dyspepsia, due to hyperacidity, constipation and retention of appetite, was usual. Loss of weight occurred in 54 of 82 cases, nine showing a loss of 40 pounds. Epigastric tenderness was often felt, and sometimes tenderness on pressure over the back. A mass (due to abscess, perforation, exudate or scars) was present in 20 cases of the series. Only 27 per cent. of the cases showed hyperacidity, and in nine hydrochloric acid was absent, seven of these showing the presence of lactic acid (due possibly

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to stagnation of food). The blood showed a chloranemia similar to that of carcinoma.

Complications of Gastric Ulcer.—Fatal hemorrhage occurred in 8.5 per cent. of the cases, perforation in 3.6 per cent. Obliteration of the liver dullness without ascites was said to mean perforation. Parotitis, tetany, perigastric adhesions, and ulcers were also seen.

Varieties of Gastric Ulcer.—The cases were divided into the acute and chronic types. Two classes of the former were distinguished—the primary (acute perforative) and the secondary (occurring in infectious disease, heart distase, etc.). Five classes of the chronic type were recognized—the gastralgic, characterized chiefly by pain; the catarrhal, by vomiting; the hemorrhagic, by presence of blood; the cachetic, by wasting without gastric signs, and the dyspeptic, by the latent course.

Diagnosis of Gastric Ulcer.—This, said Dr. McCrae, is easy in the typical and difficult in the atypical cases. A large number of the cases are latent and cannot be diagnosed. Microscopical examination of the vomitus for blood should always be made. Similar conditions from which gastric ulcer must be differentiated are gastric neuroses (in which pain is not constant and gastric analysis negative), gallstones, gastric crisis of locomotor ataxia, and all the acute abdominal conditions. In the chronic cases the diagnosis from cancer offers most difficulty. A constant hyperchlorhydria speaks for ulcer.

The Medical Treatment of Gastric Ulcer.—The case should, Dr. McCrae said, always be regarded as a possibly surgical one from the start, and nurses and attendants warned to be on the watch for dangerous symptoms. Rest in bed for four weeks or longer, absence of irritation to the stomach, and the provision of as good a blood supply as possible were said to be the principles of treatment. All food should be stopped by mouth for from four to six days. Liquid nourishment—preferably whey or peptonized milk—should then be given for 10 to 14 days. One quart should be given per day, and this should be diluted with alkalis. The diet should then be gradually increased, a soft solid diet being reacted at the end of four weeks. Atropin, large quantities of alkali, bismuth, silver nitrate, and olive oil were also said to be of use. Lavage, though not necessary as a routine, was said not to be contraindicated. The patient's diet should be carefully watched even after he recovers. In chronic cases the treatment was said to be the same, surgical interference being demanded when doubt exists as to the presnce of malignancy and when repeated hemorrhages occur. For the pain, bromides, codein, and morphia should be used.

Surgical Treatment of Gastric Ulcer.—This subject was treated by Dr. Finney. He spoke first of the interest of gastric surgery, and said that it was synonymous really with the surgery of the early and late features of gastric ulcer. It also illustrated the recent tendency of the internist and the surgeon to get together, the former realizing his limitations and the latter his possibilities. For the hemorrhage the surgeon could not do much on account of the inaccessibility of the bleeding point, and the early cases should be left to the physician. Later exploration was indicated, but little could be done beyond drainage. If hemorrhage was frequent, a jejunostomy and intestinal feeding were indicated. In perforation surgical treatment has

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been satisfactory when the cases have been seen early. Rapid cleansing, as slight insult to tissue as possible, and closure without drain were the steps of procedure in early cases. For stenosis that operation was said to be best which disturbed relations as little as possible, and pyloroplasty was said to answer this requirement. For the remote conditions (dilation of stomach and the late train of neurotic symptoms) gastroenterostomy and pyloroplasty have proven useful. As a rule, the more found at operation the greater has been the relief the surgeon could give. Dr. Pancoast reported a case of perforating gastric ulcer who was jaundiced and showed bile in the urine. At operation a large amount of free bile was found in the peritoneal cavity.

BALTIMORE CITY MEDICAL SOCIETY.

MEETING HELD DECEMBER 16, 1904.

Anchylostoma Duodenalis.—Dr. Smith showed a patient infected with this parasite. There was a history in youth of having suffered with ground itch, but otherwise the previous record was clear. Accidental discovery of an eosinophilia in a differential count made on his own blood (the patient was a medical student) led to an examination of the stools, and anchylostoma eggs were found. Dr. Smith reviewed the morphological and cultural features of this parasite, referring to the skin lesions (ground itch) caused by the entrance of the larvae.

Primary Pernicious Anemia.—Dr. McCrae opened the symposium on this disease with a discussion of the clinical features. The symptoms were, he said, few and not characteristic. Weakness, dyspnea, and pallor were the first to be mentioned; then should come loss in weight—a feature seen in 50 per cent. of the cases in spite of the opposite statement of the textbooks. Gastrointestinal symptoms (dyspepsia, vomiting, and diarrhea) were frequently seen. Hemorrhages also occurred. The nervous manifestations (numbness and tingling in the extremities, weakness of legs, "tabetic" gait) were not unusual and might be most confusing. Nothing in the symptom complex was pathognomonic. As for the signs of the disease, the color should be mentioned first. This might be a diffuse lemon yellow, a true jaundice, a local pigmentation, or a pigmentation due to arsenic. In the mouth an infectious pyrrhea was sometimes seen—a feature greatly emphasized by William Hunter and his followers. Circulatory signs were not uncommon. The pulse was often rapid, moderate dilation occurred, and hemic murmurs were common. In the stomach hydrochloric acid was often absent, but lactic rarely present. The liver and spleen might be enlarged, and ascites was sometimes seen, and edema of the ankle occurred. Here, again, no feature was pathognomonic.

Diagnosis of Pernicious Anemia.—This, of course, could only be positively made from the blood examination, and the most significant feature there was the color index. Confusion could arise from a group of diseases

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which ought to be distinguished from pernicious anemia and from another group impossible to differentiate. Under the first heading were included jaundice, cardiac disease, certain gastrointestinal conditions, kidney disease, and some nervous affections. The blood-count would, of course, make the differentiation. Cancer of the stomach, certain other anemias, spastic paraplegia (in early cases), and tabes dorsalis (in late) might be impossible to tell from pernicious anemia. In cancer of the stomach the red-count was rarely below 2,000,000, and in pernicious anemia rarely above it. A low hemoglobin was also found in the former condition.

The Blood Picture of Pernicious Anemia.—This, said Dr. Emerson, was really the whole disease. The features were a low count, a high color index, increase in the size of the reds, presence of nucleated reds in large number, evidence of blood destruction (poikilocytosis, blood pigments in the urine, jaundice, iron in blood and internal organs). The diagnosis might often be suspected from the fresh smear, the size and dark color of the red cells, the variation in their size and shape, and the lack of leucocytosis being noticeable. The average red-count at the Johns Hopkins Hospital had been 1,500,000. The color index was over one in 80 per cent. of the cases. It must be remembered that hemoglobin estimations are only approximate, and not so accurate as blood-counts, and too much stress must not be laid on the color index. The large red cells of pernicious anemia are not "dropsical" like the chlorotic cells. The cause of the dark color of the red cells is not clear. It is probably due to degeneration. The symptoms of the disease do not bear any relation to the blood-count. At the Johns Hopkins the lowest count was 454,000. The leucocytes, as a rule, average under normal, and there is a relative, but not an absolute lymphocytosis—due really to changes in the granular cells. Megaloblasts (red cells with nuclei at least as large as normal erythrocytes) are found in 50 per cent. of the cases at a low estimate. Blood crises, when a large number of nucleated reds suddenly appear in the blood, were once thought to signify regeneration and to be always followed by a rise in the count, but the attempt at regeneration is often abortive. High color index, poikilocytosis, and megaloblasts are occasionally seen in other conditions, but are fairly characteristic of this disease.

Pathology of Pernicious Anemia.—Dr. C. H. Bunting reviewed this phase of the subject. The disease was said to be a general one (except for an apparent immunity in Prague and Munich), to affect all races, to occur most often in middle life and among robust people. Addiston regarded the disease as a general anemia without discoverable cause; Biermer defined it as a progressive anemia due to diseases associated with hemorrhage, to long diarrhea, to unhygienic conditions, and occasionally to unknown cause. It is not yet certain whether pernicious anemia is a pathological entity or a symptom complex associated with many conditions. Iron deposit in the viscera, yellow fat, unusually red muscles, and changed bone-marrow are among the pathological features. Atrophy of the stomach, cord degenerations, and infections of the gastrointestinal tract are also seen. The cause of the disease has been the subject of much dispute. Cohnheim thought there was a reversion of the bone-marrow to the embryonic type. Possibly the process consists in absorption of toxins from the intestine, hemolysis,

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and resulting poor function by the bone-marrow. Certain rabbit experiments made by Dr. Bunting, hemolysis being produced by the injection of ricin, seemed to bear this explanation out.

Treatment of Pernicious Anemia.—Dr. Brown said that this varied somewhat with the physician's theory of the cause of the disease, mouth antisepsis being emphasized by some, administration of bone-marrow by others. Transfusions of defibrinated blood should probably be reserved for extreme cases. Arsenic, given as Fowler's solution, as cacydolate of sodium or as atoxyl, was the drug *par excellence*. Improvement with it might be striking. The combination of other drugs usually availed little. Absolute rest, fresh air, a moderate climate (possibly a slight altitude), and great care as to the diet were essential features in the treatment.

THE LÆNNEC SOCIETY.

MEETING HELD DECEMBER 15, 1904.

The meeting was devoted to a symposium on tuberculosis of the urinary apparatus.

Pathology of Kidney Tuberculosis.—This phase was discussed by Dr. Wm. Welch. There were, he said, two forms of kidney tuberculosis—the scattered (miliary) and the chronic localized types. The former was usually associated with general miliary tuberculosis, but it was noticeable that the kidney, though sometimes crowded with tubercles, usually contained fewer than other organs (particularly the liver and spleen), a fact found not only at the autopsy table, but in experimental work as well. Perhaps the kidney is particularly resistant to this infection. Certain miliary tuberculosis here is of no clinical importance, for it produces no recognizable symptoms. The disease is probably perivascular, though its embolic origin has been suggested.

Chronic Localised Renal Tuberculosis.—This was said to be the more interesting form clinically, much light having been shed on it by surgical advance. It may begin in the pyramids, sometimes at the papilla itself. An extensive caseous mass is then formed, there is marked tendency to cavity formation, and nephrophthisis results. Sometimes only one pyramid is affected, but often more than one, and then the picture is that of a pyelonephrosis. The pyramids are destroyed, but the columns of Bertin persist. The process extends as do similar cavities in the lungs. A caseous mass is formed. This is surrounded by a layer of granulation tissue, and outside of this is a fibrous layer containing many tubercles. Another type of the condition is, however (though less commonly), seen. Here several large caseous areas form and the whole organ becomes fibrous, but no real cavities appear. The disease may, though not commonly, begin at the cortex.

The Source of Renal Tuberculosis.—Dr. Welch said there was no doubt but that both ascending and hematogenous forms occur. Cohnheim was the first to show that not all renal tuberculosis was of the ascending type and to suggest the *auscheidungs tuberkulose*. If, as stated by some, infec-

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tion was always hematogenous, it was difficult to see why the disease was more frequent in males than in females, as autopsy statistics undoubtedly showed. The speaker's opinion was that infection took place by both routes—in females most frequently through the circulatory blood.

Clinical Features of Renal Tuberculosis.—Dr. Futcher spoke of the varieties and symptoms of the disease, having drawn his facts largely from a complete monograph on the subject shortly to be published by Dr. George Walker. Of 753 patients dead of tuberculosis in the Charité Hospital in Berlin, 25 per cent. showed renal infection; in 19 cases the bladder was involved, and the prostate and testis in 13. Of 1369 cases autopsied at the Johns Hopkins Hospital, 784 showed tuberculosis; in 25 the kidneys were involved. Of 36 miliary cases all showed renal involvement. Primary tuberculosis of the kidney was not demonstrated in any case. The liver and spleen were involved about as frequently as the kidney. In the medical department of the hospital there had been 16,000 admissions. Of these, 1085 were tuberculous, the infection being renal in 17. Most of the cases occurred in the third decade. Tumor was palpated in seven cases, pyuria present in thirteen, hemorrhage in eight, acid urine in fifteen, and tubercle bacilli found in the urine in nine. The condition was secondary to tuberculosis of the lower genito-urinary tract in nine cases.

Symptoms of Renal Tuberculosis.—The condition has often been latent, and presents no additional symptoms when a part of acute miliary tuberculosis. Tilden Brown has reported cases without symptoms, but with bacilli in the urine. Polyuria has often been the earliest symptom. Its cause is not known. Frequent urination has usually been present early. With it there has been burning in urethra and bladder during or at the end of micturition. This is present without vesical tuberculosis, and may be due to the action of acid urine on a slightly-inflamed trigone. Hematuria is always an early, and may be the first symptom. The amount of blood is usually not large, but the hemorrhage continues throughout the 24 hours, differing in this respect from calculous hematuria. Pyuria always appears sooner or later, the pus being abundant or only microscopical. Pain is common over the kidney. It is usually dull and radiates to groin, abdomen or scrotum. It may be paroxysmal (due to lodgment of a clot or a caseous mass in the ureter), and at this time the urine may be quite clear. Tumor is palpable in many of the cases, is usually tender, and may either preserve the kidney outlines or be quite irregular. Walsham and others have found tubercle bacilli where no kidney infection was present, and this possibility must be borne in mind. The urine for microscopical examination should be collected by catheterization with careful technique, as the tubercle and smegma bacilli are practically indistinguishable by ordinary stains. A portion of the second urine should be centrifuged and the smear stained by Grethe's method (carbol fuchsin, decolorizaation with 20 per cent. HNO_3, followed by absolute alcohol, counterstain with alcoholic solution of methylene blue) or by the method of Bunge and Trautenroth (absolute alcohol, chromic acid, carbol fuchsin, sulphuric acid, counterstain). Fever is a constant symptom. It is continuous, but irregular, and may rise quite high if the ureter be blocked. Sweats are frequent. Cystoscopic examination with ureter catherization may be necessary to localize the disease. In-

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jections of methylene blue and of phloridzin, together with cryoscopy, have been used to determine the condition of the unaffected side.

Operative Treatment of Renal Tuberculosis.—Dr. Kelly discussed the result of a series of four cases treated surgically by himself, Dr. Cullen, and Dr. Hunner. In his series no case of ascending infection was noted, and it is probable that infection usually passes in the direction of secretion—going from kidney to bladder in the female, and from epididymis to bladder in the male. Vesical tuberculosis without renal involvement occurred in only three cases of this series, being secondary to rectal involvement in one and to tubal involvement in a second, the transmission being direct in these cases. In the third case no real involvement could be proven, though the patient always reacted violently to tuberculin. The route by which the bladder and then the opposite kidney are infected is not known. Probably it is the blood-current, though disease of the ureteral orifice may allow ascending infection from the bladder. Albert in 1890 pronounced nephrectomy for renal tuberculosis a flagrant error, but the disease is now undoubtedly curable. If allowed to go untreated, there may be healing or the enclosure of the kidney in a sclerotic sac or obliteration of the ureter. These processes will protect the general economy from involvement. Advance of the disease in the kidney, transmission down the ureter, secondary infections, and tuberculous involvement of other organs are, however, the dangerous and frequent results of neglect. Surgical treatment may be conservatively done, and cure has occasionally followed curettage. If the disease is sharply defined, a wide excision might be possible, but as a matter of experience it is usually too extensive for this procedure. Nephrotomy is never a curative operation, but is admirably suited for patients too ill to undergo nephrectomy. The examination of urine for tubercle bacilli is a difficult matter. Catheterization does not necessarily avoid the entrance of smegma bacilli, and guinea-pig injection may be necessary. A persistent acid pyuria without other organisms is always suggestive. Animal inoculations may be positive in cases with no kidney lesions, but the absence of urinary symptoms will make the diagnosis. The kidneys should always be palpated, but the possibility of a hypertrophied sound kidney should always be kept in mind if a tumor is felt. Palpation of the ureters per vaginum is most important. Cystoscopic examination of bladder and ureteral orifices will often make the diagnosis. Tuberculin reaction is valuable when pain is localized in the affected kidney. Nephrectomy should be done through the kidney triangle, and when the capsule is thickened and adherent Ollie's intracapsular operation should be done. The next step in advance on this subject is earlier diagnosis. Localization of tuberculosis in the kidney is the most favorable one in the body, and vesical tuberculosis does not contraindicate surgical treatment. Nitrous oxide is the anesthetic *par excellence* for these cases. Dr. Noble said that his experience had convinced him first because the disease was always more advanced than in the bladder, and that kidney tuberculosis was never the result of an ascending infection, secondly because the bladder always healed after nephrectomy. Dr. Osler referred to the importance of early diagnosis, and said that hematuria and pyuria should always suggest the possibility of tuberculosis.

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Book Reviews.

A Manual of Personal Hygiene. Proper Living Upon a Physiologic Basis. By American Authors. Edited by Walter L. Pyle, A.M., M.D., Assistant Surgeon to the Wills Eye Hospital, Philadelphia. Second edition, revised and enlarged. 12mo volume of 441 pages, fully illustrated. Bound in silk, $1.50 net. Philadelphia, New York, and London: W. B. Saunders & Co. 1904.

The object of this manual as advanced by its editor is "to set forth plainly the best means of developing and maintaining physical and mental vigor." That this can be obtained by adherence to certain hygienic rules is the belief of Dr. Pyle and his collaborators. The book is written in a clear and simple style, intelligible to lay readers, and is undoubtedly a commendable appeal to both the laity and profession.

The subtle intoxication which hygiene always seems to have for its votaries has not altogether been avoided by these authors, who, in common with most hygienists, do not realize the necessary limitations of a very valuable and important principle; anent which we notice the following aphorism: "* * * from ignorance and transgressions of hygienic laws arise all disease and tendency to disease."

Disease we recognize now as the resultant of two opposed forces, namely, the resistance of the tissues and the virulence of the infecting organism. The latter factor hygiene cannot reach, and its influence upon the former, while profound and extensive, has certain very evident limitations.

We can fully sympathize with the editor's condemnation of "health books" written by faddists, quacks, and misinformed lay people, and we agree with his conclusions that "such books make hypochondriacs of their readers, and if they include advice as to self-treatment they may do great harm."

Apparently, judging from past experience, a smattering of medical knowledge is a dangerous thing, but it is becoming increasingly necessary to familiarize the public with the general principles of hygiene, particularly as regards communicable diseases. The medical profession will never be wholly relieved from the necessity of controlling the popular fallacies always standing in the way of scientific progress.

The popular fallacies of today are the professional dogmas of a hundred years past, and the man who tells you that his blood is "pure" or who believes that he has contracted a pneumonia or pleurisy by simple exposure to cold simply reiterates the old doctrines of "humors" and of organic inflammation and congestion produced by external cold.

There is much truth in the author's comments concerning the general ignorance of the laity in matters of elementary human physiology: "Men and women who would be greatly chagrined to be corrected in the pronunciation of a popular foreign name, or who would resent as an insult any imputation as to their lack of general culture or learning, show not the slightest embarrassment at their ignorance of the common physiologic functions of digestion, circulation, respiration, etc." We cannot agree with the

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editor, however, that the instinctive popular avoidance of subjects relating to the human mechanism is a wholly unmixed evil.

The following subjects are treated of by Dr. Pyle and his collaborators:

Hygiene of the Digestive Apparatus: Dr. Stockton of Buffalo. Mastication; Care of Teeth; Foods and Cooking; Alcohol.

Hygiene of the Skin and Its Appendages: Dr. Fox of New York. Cold, Hot, and Turkish Baths; Clothing; Care of the Hair; Shampooing; Lotions, etc.; Care of Complexion; Hair Restoratives and Hair Dyes.

Hygiene of the Vocal and Respiratory Apparatus: Dr. Ingals of Chicago. Nasal Catarrh; Mouth-Breathing; Adenoid Growths; Functions of the Larynx; Care of the Voice; Singing; Chest and Lungs; Respiration; Shoulder Braces; Prevention of Tuberculosis.

Hygiene of the Ear: Dr. Randell of Philadelphia. The External Ear; Cleansing; Foreign Bodies; Earrings; Middle Ear; Causes of Deafness; Suppurative Disease; the Internal Ear; Nerve Deafness, etc.

Hygiene of the Eye: Dr. Pyle of Philadelphia. General Description of the Eye and Its Diseases; Binocular Vision; Bathing the Eyes; Conjunctivitis; Granular Lids; Cataract; Foreign Bodies; Burns; Defective Vision; Color-Blindness; School Hygiene; Desks and Seats; School Books; Artificial Lightings; Eyeglasses, Spectacles, and Lorgnons.

Hygiene of the Brain and Nervous System: Dr. Courtney of Boston. Heredity and Environment; Degeneracy; the School-Going Age; Neurasthenia; Overwork; Worry; Sleep; Exercise.

Physical Exercise: Dr. Stewart of Chicago. Physiology of Muscular Movement; Effects of Muscular Exercise; Physical Training; Home Gymnastics.

Domestic Hygiene: Dr. Bergey of Philadelphia. Dwellings, Construction and Location; Drainage, Sewerage; Heating, Lighting; Water Supply; Ventilation; Disposal of Garbage and Ashes; Nuisances; House Cleaning; Food and Dietetics; Cooking; Adulterations; Home Quarantine and Isolation.

Appendix: Pulse; Temperature, and Respiration; Massage; Accidents, Poisoning, Antidotes, etc.

A Laboratory Manual of Human Anatomy. By Lewellys Barker, M.B. (Tor.), Professor of Anatomy in the University of Chicago. Philadelphia: J. B. Lippincott Company. 1904.

The need of such a work as is now before us has undoubtedly been felt by both instructors and students. While it is no distinct departure, the character of the work places it in a category to itself. This laboratory manual is not intended to take the place of a descriptive textbook, but is intended to act as a guide to the student in the dissecting-room. One needs but to glance over the text and the illustrations to note that it does this in a rather unique way. It is sufficiently descriptive and explanatory to assist the student, but purposely avoids detail, which the student is to work out on his own account and gather from more extensive works of reference. The nomenclature employed is that which was formulated by the German Society of Anatomists. The old terms, when different from the new, have been added in parenthesis. The 300 illustrations convey in a very satisfactory manner the structure of the body, and form a valuable anatomical atlas.

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MARYLAND MEDICAL JOURNAL.

JOHN S. FULTON, M.D., *Editor.*

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BALTIMORE, FEBRUARY, 1905

IMPROVEMENT IN THE WATER SUPPLY OF BALTIMORE.

THE spirit of progress has seized the city of Baltimore, and an era of extensive improvement is at hand. The mayor has organized a number of excellent committees, and the citizens thus called into public service have responded manfully. The prospect of a start upon a complete system of sewerage is almost assured. This paramount need of the city is at last recognized in its true relation.

The problem of water supply is also under consideration by a first-rate committee, and this committee recently invited several citizens having special knowledge of the sanitary relation of public water supplies to express their views on the particular needs of Baltimore. The first three speakers, all medical men, and two of them professional hygienists, expressed the opinion that Baltimore needs filtration. They did not speak of this need as immediately vital to the city, or even as very urgent. They treated the question, however, quite as if water supply were the only large problem now under consideration and as if the city were prepared to undertake at once whatever improvements are necessary. The need of increased storage and of better control of pollutions were also spoken of in this part of the discussion.

Dr. Charles O'Donovan made a strong argument for the acquisition by the city of some 60,000 acres of land on the Gunpowder watershed for the sake of abolishing the more serious sources of pollution, and making the supply more regular by reforestation of the lands.

Dr. O'Donovan's ideas on this subject are well known to the medical profession and have been the subject of editorial comment in the MARYLAND MEDICAL JOURNAL. Ownership of the watershed would probably be advantageous to Baltimore if it can be acquired in a reasonable time and at reasonable cost. The experience of New York and Boston has been on the whole satisfactory, though less so than was expected. Ownership of the watershed is for Baltimore a much simpler economic problem than for Boston or New York. The incentives here are less, though not on that account insufficient. Dr. O'Donovan thinks that filtration will never become necessary if the city controls the watershed.

Professor Matthews of the Geological Survey described the characteristics of the Gunpowder region, emphasizing their relations to clear water. After

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these speakers, the city water engineer, Mr. Quick, spoke in opposition to filtration.

At the following session of the committee it was decided to recommend increased storage capacity, better control of nuisances, and the purchase of about 80,000 acres of land on the watershed. These improvements will cost, it is estimated, about $5,000,000.

This is certainly an excellent program, quite as good, in fact, as the city is able to undertake at this time, and thoughtful citizens should maintain their interest in the subject until these recommendations have become safely incorporated in the general scheme of municipal improvements.

THE ARGUMENT AGAINST FILTRATION.

VERY likely the question of filtration was settled by the incoercible argument of cost. At any rate, it was probably not disposed of by the argument of Mr. Quick. Some of his forcible remarks had important bearings on the question of filtration, but his argument, as a whole, was just as cogent against the final recommendations of the committee. Speaking as an engineer, he said that the distributing system of Baltimore is very bad indeed, the mains being of insufficient size, of poor material, out of repair, and put down in such haphazard fashion that there are literally thousands of dead ends. Mr. Quick said also that it is impossible to find a site on the Gunpowder where the water can be fed to filter-beds by gravity. The cost of lifting the water is, of course, prohibitive. So much of Mr. Quick's argument was based upon his skill as an engineer, and is outside the range of medical criticism. Having shown that it is impossible to filter Baltimore's water supply, and that the water, if filtered, could not be delivered to consumers in a state of purity, Mr. Quick undertook to show that the water supply of Baltimore city is good enough. He described the systematic and careful work done by the water board in inspecting the watershed, suppressing sources of pollution, obtaining information of cases of typhoid fever among the watershed population, and providing for the safe disposal of their discharges. In these matters the present water board appears to have been far more successful than any previous board, and has accomplished much that the State and local boards of health, thoroughly empowered, have failed to do.

Mr. Quick has investigated many cases of typhoid fever occurring in Baltimore during the past year or two, and has satisfied himself that more than half the cases investigated were traceable to sources of infection outside the city. He found no case in which the evidence of infection by the city supply seemed to preponderate over other possible sources of infection. The colon bacillus, Mr. Quick thinks, is not often drawn from the taps, and when present, he thinks, is of little, if any, significance. The typhoid bacillus, he believes, will not survive from the stream to the tap, the journey being sometimes as long as 27 days, and he doubted whether it could traverse the nine-mile conduit.

Referring to the color of the water, he said that its muddy appearance is often due to iron rust loosened from the incrusted distribution pipes. Bal-

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timore water, he says, is usually clear and free from taste or odor. Bad taste and odor, when present, he says, are often erroneously attributed to pollution of the streams or reservoirs, when, in fact, the offensiveness arises from the thousands of dead ends in the distribution pipes. Complaints of bad odor have wholly ceased, he says, since the impounded water was treated with sulphate of copper. Without going into details, he spoke of sulphate of copper as promising marvelous results in the purification of water supplies.

So far as the physics of water supply are concerned Mr. Quick's opinions are entitled to our very respectful consideration, but on questions of chemistry and biology there are local authorities more weighty. Compared with most of the filtered waters in this country, bacterial counts are favorable to Baltimore water. The test of current mortality and morbidity does not score against Baltimore. With control of the watershed and better storage we may increase one advantage over some cities whose supplies are said to be filtered, and perhaps for years count ourselves as well defended as the few cities whose supplies are really filtered. But no chemist who bathes will testify that Baltimore water is ever clear, and cautious bacteriologists do not drink straight tap water. Colon bacillus is usually demonstrable at the laboratory tap in the City Hall Annex, and at some other laboratories, they say, colon bacillus is rarely absent. These careful observers make no outcry of alarm, nor do they assert very positive views as to the significance of colon bacillus. Like hundreds, perhaps thousands, of other citizens, they are content with bottled waters or with domestic purification of city water, and they hope that the significance of colon bacillus, if such as they suspect, will not be demonstrated upon the population of Baltimore.

CONTEMPORARY MEMORANDA.

In the suit just won by the State against the directors of Gilsenkirchen (Germany) Water-Works, the prosecuting attorney said that the 22 days of that trial did more for public health than 22 years of ordinary sanitation. The directors of these water-works had a secret pipe by which they were able at need to augment their supply, using unfiltered water for that purpose. The use of this supplementary source was found necessary only in the summer and then on no more than three days a week. Only one epidemic of typhoid resulted—3235 cases, with 290 deaths. The directors were indicted for adulterating drinking water. Fines ranging from $300 to $375 were inflicted, and the costs amounted to $25,000.

Parisians have always been overconfident of their remote springs, streams, and ground water. In 1903 Paris had an unusual amount of typhoid fever, as some Marylanders will everlastingly remember. Since then the discussion on filtration has grown acrimonious. The partisans of *eau de source* have been especially angry, for events have favored the supporters of *eau filtrée*. A special commissioner lately returned from this country has reported us ahead of the French in the matter of water supply. He says that among the countries under pupilage to Germany, France is distinguished as about the dullest pupil.

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Medical Items.

THE trustees of Rush Medical College, Chicago, have elected Dr. Llewellys F. Barker to a professorship of medicine.

UNDER the title "Aequanimitas," Dr. H. K. Lewis of London has brought out a volume of essays and occasional addresses by Dr. William Osler.

THE report of Sheppard and Enoch Pratt Hospital for the Insane is out. Dr. Brush, the superintendent, strongly advocates State care of the insane.

THE second course of Herter lectures at the Johns Hopkins Medical School will be delivered next October by Dr. Hans Meyer, professor of pharmacology in the University of Vienna.

THE United Charities Hospital of Cambridge, Md., has added to its staff Dr. W. S. Baer of Baltimore, orthopedic surgeon; Dr. L. M. Allen of Baltimore, obstetrician; Dr. I. R. Trimble, surgeon.

THE last six months of 1904 passed without a single case of smallpox in Baltimore. During that time there have been four cases in other parts of the State—one in Charles county and three in one family in Garrett county.

THE bill to incorporate the American Medical Association is now in the judiciary committee of the House of Representatives. Dr. Wm. H. Welch of Baltimore is named as one of the incorporators.

DR. ARTHUR R. CUSHNY, professor of materia medica and therapeutics in the University of Michigan, has resigned to become professor of the same subjects at the University of London, England.

DR. ELI W. FREE, one of the oldest physicians in Baltimore, died at his home on North Carey street on January 26 of heart trouble. Dr. Free graduated at the College of Physicians and Surgeons in 1847. He was 81 years of age.

PHYSICIANS who studied at the University of Pennsylvania between the years 1884 and 1889 will present to the medical department of the university a life-sized portrait of Dr. William Osler. Dr. Charles H. Frazier is treasurer of the fund for that purpose.

THE board of estimates has given Dr. Bosley, health commissioner of Baltimore, the sum of $1000 with which to make an initial experiment in the medical inspection of schools. Dr. Bosley has appointed Dr. I. R. Page and Dr. R. Tunstall Taylor medical inspectors.

THE suit against the Gilsenkirchen Water-Works on account of an epidemic of typhoid fever attributed to the secret augmentation of their water supply by unfiltered river water has resulted in a verdict for the State. The costs amount to about $25,000.

DR. J. W. WARD has been unanimously re-elected president of the San Francisco Board of Health. This is the famous board which the fiddling mayor appointed for the purpose of concealing the truth about plague. Dr. Ward had considerable difficulty in being elected president of the board last year. This year he is re-elected unanimously. He deserves it. So does the board.

CINCINNATI has a water controversy. The proposition to dam the Ohio river at Cullom's Ripple has aroused opposition on the ground that the pollution of Cincinnati's water supply will be increased by holding back the water. The more experienced believe, however, that damming will lessen the contamination. A little contamination, more or less, is hardly worth a dam.

THE Talbot County Medical Society has elected the following officers: President, Dr. Julius A. Johnson of Easton; vice-president, Dr. J. A. Stevens of Oxford; secretary and treasurer, Dr. Philip L. Travers of Easton; delegate to State Society, Dr. E. R. Trippe of Easton; censors, Dr. S. C. Trippe of Royal Oak, Dr. J. S. Garrison of Easton, Dr. Charles H. Rose of Cordova.

A BILL has been introduced in the New York State assembly prohibiting the city of New York from taking water from any stream in Westchester county. Columbia and Ulster counties propose to raise similar barriers against

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the New York city water department. Duchess county passed such a bill last winter. In view of these difficulties, Governor Higgins proposes a State commission for the conservation of the waters of the Adirondacks.

At the meeting of the Baltimore Medical and Surgical Association on January 9 the following officers were elected: President, Dr. C. Urban Smith; vice-presidents, Dr. Charles O'Donovan and Dr. Nathan Winslow; secretary, Dr. E. L. Crutchfield; treasurer, Dr. W. B. Perry; executive committee, Drs. J. M. Craighill, W. B. Hebb, and David Street; committee of honor, Drs. John Neff, J. W. Linthicum, and John I. Pennington.

The annual meeting of the General Alumni Association of the University of Maryland was held January 18. Dr. Wilmer Brinton was elected president; Dr. Eugene F. Cordell, secretary and treasurer of the endowment fund. A prominent feature of the occasion was the address of Dr. Thomas Fell, president of St. John's College, Annapolis. Dr. Fell advocated the establishment of a State university, uniting St. John's College with the University of Maryland. This proposition was referred to a committee of five.

There are not enough physicians in Newfoundland. In certain coast sections the people depend for medical and surgical aid upon the few men or women who have, or are supposed to have, some smattering of medicine. The situation in such places is so serious that the government proposes to appoint physicians to the magistracy in those areas. Physicians who will agree to settle in one of these remoter sections will receive from the government an allowance of $500 a year. For this sum they will be expected to settle fishing disputes and other small litigations. Serious crime is said not to exist among these people.

A centenary jubilee in memory of Manuel Garcia is in course of preparation. This most distinguished music teacher and inventor of the laryngoscope will be 100 years old on March 17, 1905. At a meeting of the allied committees representing the American Laryngological Association, the American Laryngological, Rhinological, and Otological Society, and the section in laryngology of the New York Academy of Medicine it was voted to appeal to laryngologists throughout the country for contributions not exceeding $5 each for the Garcia fund. Payment should be made before February 15 to either Dr. R. C. Myles, 48 West 36th street, representing the American Laryngological, Rhinological, and Otological Society, or Dr. J. E. Newcomb, 118 West 69th street, representing the Americal Laryngological Association.

The famous French surgeon, Doyen, has a new trouble of his very own. Two or three years ago he commenced to have his more important operations cinematographed. Moving pictures were used to illustrate his lectures. Moving pictures have also become popular at private entertainments, and a cinematographic record of a surgical operation is not too weird for Parisian taste. So it happened that the guests at a private entertainment some time ago were amazed to see revealed upon the screen M. Doyen administering surgical rites upon the person of their amiable hostess. The hostess was perhaps equally amazed—at least the story says so. M. Doyen made a vigorous protest to the picture men. That, no doubt, was an animated scene, for the photographers gave M. Doyen what the irreverent call a "Merry ha! ha!" The matter is in the courts.

The steamer Athos left Baltimore on December 28 with 40 passengers intending to be present at the Pan-American Medical Congress in Panama and at the American Public Health Association in Havana. The ship encountered rough weather on the outward trip, and the passengers saw the tail-ends of the two meetings. The return trip included a stop at Jamaica. Several of the passengers gave up their itinerary at Havana and went home by other routes. On January 26 the Athos ambled back to her dock in Baltimore, carrying but eight of the original number of passengers. These had organized themselves into a Secret Order of the Survivors. These included Dr. A. McDonald of New York, Dr. W. E. Allen of Baltimore, Dr. Rosalie Slaughter of Washington, Dr. E. S. Stevens of Philadelphia, and Dr. Irving Walker. The story of the outward trip is told elsewhere in the Journal by Dr. Simmons.

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DYSENTERY, WITH SPECIAL REFERENCE TO ITS BACILLARY FORM.

By Joseph J. Kinyoun, M.D.,

Glenolden, Pa.

AN ADDRESS BEFORE THE ASSOCIATED HEALTH AUTHORITIES OF PENNSYLVANIA AT GETTYSBURG, MAY 27, 1904.

(Continued from February Number.)

Usually only one group of the dysentery organism is found, but occasionally both the non-acid and acid producing groups have been found in the same case; also it has been isolated from a case of typhoid fever. The organism is local in its effects, the bacilli being confined almost entirely to the intestinal tract, and does not invade the body like that of the typhoid bacillus. Shiga found the organism in the submucosa and occasionally in the mesenteric glands.

Cultures of the organism grown in bouillon or upon solid media are quite toxic. Bouillon cultures are decidedly toxic for the smaller animals. Large quantities of cultures have been fed to the smaller animals, such as rabbits, guinea-pigs, monkeys, and cats, with the result of causing in the monkey a catarrhal enteritis with dysentery discharges which clinically resemble the attack in man. Strong[9] fed cultures to a condemned criminal which caused a mild attack of dysentery, the organism being recovered from the stools.

The toxins can be isolated from its cultures and given intravenously to rabbits, producing a decided effect upon the mesenteric glands and the mucous membrane of the intestine. It appears that the poison is eliminated through the intestinal tract. It is very frequently followed by extravasations in and around the glands, with a fatty degeneration of the mucous membrane of the intestine, accompanied with thrombosis and hemorrhage.

Valliard and Dopter[19] have produced typical lesions of dysentery in the lower animals by intravenous injections of filtrates from bouillon cultures. The dead cultures, even when deprived of the soluble toxins, are very pathogenic to all the laboratory animals

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and to horses. The effect of the killed cultures is very erratic; sometimes a small amount will cause the illness of the animal for a day or two after the injection, when there is a rapid return to health. On other occasions there seems to be no effect upon the animal for as much as a week, when it suddenly becomes ill and dies from a progressive cachexia.

This evidently is in keeping with what we know of the intracellular poisons of typhoid and hog cholera and other organisms of this group. Martini and Lentz[20] have succeeded in extracting the intracellular poisons by autolysis. Their method consists of growing mass cultures of the organism on solid media for 12 to 24 hours, and then washing this culture off by means of salt solution and heating it for 30 minutes at 60° C. Then it is placed in an incubator for 24 hours at 37° C., during which time many of the cells undergo an autolysis, the filtrates from such a fluid becoming very highly toxic.

During the past year experiments have been conducted by Dr. Hitchens and the writer on these lines. We have succeeded not only in extracting the intracellular toxins of dysentery, but quite a number of others. The filtrate from these autolytic solutions are precipitated by saturated solutions of ammonium sulphate and their toxicity preserved for a much longer time than has been observed in the concentrated solutions. These, however, gradually lose their toxicity.

Animals such as guinea-pigs and horses can be immunized by these intracellular toxins. This has been done by ourselves, as well as Rosenthal[21] and Todd,[22] during the past year. If a group of animals (guinea-pigs) be continuously treated with very small doses of concentrated or the precipitated toxins for a month or more, during which time they receive an amount not greater than 5 M. L. Ds. of the respective toxins, their blood shows not only a marked agglutinating property, but also contains a considerable quantity of immune bodies, so that 1 c. c. of the blood serum is sufficient to protect an animal against 1 M. L. D. of the toxin. The agglutinins were very high.

Horses appear to be the best animals for immunization. Shiga immunized quite a number of ponies at Tokio during the years 1899 and 1900, and after several months' treatment the blood showed rather a high immunizing property against an M. L. D. of the living culture, one-tenth of a c. c. of the serum being sufficient to protect against the M. L. D. of culture. Kruse succeeded in doing the same in Germany in 1901. He claims, however, that his serum was produced after six months' treatment. Gabritischewski of Moscow has also immunized horses against the dysentery bacillus by administering to them alternately the toxins (dead bacilli) and the living cultures. He thinks the method is superior to the employment of the dead or living cultures alone, as the serum not only possesses a high antitoxic strength, but also its bacteriolytic power was increased.

Antidysenteric serum has been employed since 1900 by Shiga,

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and 1901 by Kruse, in the treatment of epidemics of bacillary dysentery of adults. The results of the treatment show that it had a marked influence not only in ameliorating the distressing symptoms, but also in reducing the death-rate. The writer also had an opportunity afforded him in Tokio during the summer of 1901, where he observed quite a number of cases of bacillary dysentery of adults treated with the antidysenteric serum. The effect of the serum treatment on the majority of these was very encouraging, particularly so in cases of a few days' standing. Cases of longer duration were not influenced very much by it. No claim, therefore, can be made that the use of antidysenteric serum for the treatment of bacillary dysentery in adults is anything new. The only thing which may be justly claimed for it is a more extensive use and its application in the treatment of cases of bacillary dysentery occurring in children.

During 1903 Professor Flexner of the Rockefeller Institute conducted an extensive inquiry regarding the etiology of summer diarrheas of infants occurring in the United States; also the effect of the antidysenteric serum upon such cases. The reports of this inquiry have not yet been fully published, but so far as known there seems to be quite a difference of opinion regarding the status of the dysentery bacillus in relation to cholera infantum or summer diarrheas of children. Some are inclined to attach a greater importance to it as being the cause, whereas not a few hold a contrary opinion. One observer finds the dysentery bacillus in the majority of the cases of summer diarrhea. La Fetra and Howland observed 64 cases of infantile diarrhea occurring during the summer of 1903 at the Vanderbilt Clinic, New York city. Of these, 62 were positive, or 97.5 per cent. These were the usual dispensary cases, and were seen early. Bassett found the organism in 19 of 25 cases, or 76 per cent. These were those sent to a children's sanitarium, and were, as a rule, severe, and were not seen early in the disease. The cases under observation at the Thomas Wilson Sanitarium show that there was nothing very characteristic in the stools—not the pathological conditions found at autopsy—to differentiate cases caused by the dysentery bacillus from those of the ordinary summer diarrheas. Knox is inclined to believe, however, that the larger proportion of these cases were caused by the dysentery bacillus, and if the negative cases could have been under observation earlier, during the first days of illness, a larger number of these would show the dysentery bacillus. Duval and Shore had under observation 98 cases of diarrhea, the symptoms in these ranging from a simple diarrhea to acute dysentery, and the bacillus was isolated in 84 + per cent., whereas Parke and Koplik found it in about 20 per cent., and only in those cases where there were symptoms of acute dysentery. The majority of cases of infantile diarrhea were infected with the acid type, the Shiga, or alkaline type, only being found in less than 25 per cent. of the cases.

The mortality of hospital cases is very high, but this must not be taken as final with regard to the true mortality of the disease, as

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these cases have usually been ill a considerable time before admission, so that secondary infections predominate.

It is a well-established fact that many cases of summer diarrhea of the acute type recover within a few days after the attack even under a simple dietary and hygienic treatment. The greater proportion of summer diarrheas occur among children fed on cow's milk, and while we cannot say just what the life-history of the dysentery bacillus is outside of the body, it cannot be denied that wherever the milk supply is carefully guarded there are fewer cases of diarrhea among children fed on such than occurs when the ordinary milk is used. It appears, therefore, that the disease is intimately connected with milk. It is also probably conveyed in the same manner as typhoid fever or cholera.

Mortality.—The mortality from dysentery varies considerably both as to the country in which it occurs and also in individual epidemics. The cases occurring in this country have been more numerous during the latter part of the summer, with a greater mortality than those in winter. In these latter the mortality is insignificant. The same may be also said with regard to those occurring in other latitudes, with the exception of Japan, where it has prevailed to a great extent over the whole empire, and has been followed with a death-rate far in excess of any other country. There were reported to the Imperial Health Office the following:

1894.....	155,140	cases,	38,094	deaths,	mortality	24.5 + %
1895.....	52,711	"	12,959	"	"	24.2 + %
1897.....	89,846	"	22,520	"	"	25 + %
1898.....	49,382	"	12,650	"	"	25.6 + %
Total.....	347,079	"	86,223	"	"	24.8 %

Epidemics also vary both in their extent and in their mortality. Shiga has collected 2648 cases of bacillary dysentery occurring among adults in and around Tokio from 1891 to 1900, inclusive; among which there occurred 911. The annual death-rate ranged from 22 to 55 per cent. Rosenthal states the usual mortality in hospital cases in Moscow ranges from 12 to 17 per cent. Five hundred and twenty-eight cases are reported occurring among the troops of the Prussian army in 1900-1901, of which only 14 were fatal, a mortality of 2.7 per cent. No bacteriological examination is mentioned, and it is presumed that none was made, as Kruse's investigations were later. In this country 234 cases of bacillary dysentery occurring in epidemic form have been reported.[21] There were six deaths, a mortality of 2.5 per cent.; 10 additional cases among this same population in 1903, with no deaths. With regard to the mortality of cases of bacillary dysentery of child-life, it is believed that it is as high, if not higher than among adults, although statistics are not at hand to prove this.

Serumtherapy.—As before stated, the administration of anti-dysenteric serum in cases of bacillary dysentery is not of recent origin. Shiga first employed it in 1898 in the treatment of 65

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cases admitted to the hospitals in Tokio. He further reports 110 cases treated during the years 1899-1900. The mortality of these was 9.6 per cent., compared with those not treated of 32.6 per cent. During 1900 400 additional cases were given the serum treatment. The hospital cases show a mortality of 9 per cent., and those treated in their homes by private practitioners 12 per cent.

Rosenthal reports 157 cases of dysentery in adults treated with the serum, with a mortality of 4½ per cent., against the 12 and 17 per cent. treated symptomatically.

Shiga observes that in 510 cases coming under his observation, 202 were treated symptomatically and 298 cases with the serum. The average duration of those treated symptomatically was 40 days, as compared with those treated with the serum of 25 days, all deaths occurring under symptomatic treatment of 11 days, and those given the serum treatment 16 days. He observes that the serum treatment shortens the duration of the disease in those cases recovering, and prolongs it in those which died.

Kruse also reports 100 more cases treated with the serum, in which he states there was a decided improvement over that of the ordinary treatment. We have now on record 1000 cases which have been treated with antidysenteric serum, a sufficient number, it is believed, to draw a comparison between this and the symptomatic treatment.

These statistics refer only to adult cases, and do not touch upon the influence of the serum treatment in cases of bacillary dysentery among children. Shiga, Rosenthal, and Kruse emphasize the fact that the best results following the use of antidysenteric serum is to be expected in cases which have been ill only for a few days, and in these, they observe, the effect of the serum is pronounced; but in those cases which have been ill for a considerable time little or no effect of the treatment was noted. The writer has confirmed this in some observations which he made in a group of cases of bacillary dysentery treated with the Shiga antidysenteric serum in the hospitals of Tokio.

With regard to the value of the antidysenteric serum in the treatment of bacillary dysenteries of children, so far it has not yielded the same results as has been observed in the treatment of the adult cases; in fact, it has been a disappointment. Something like 80 cases of bacillary dysentery have been treated during the past year. Of these, 38 were fatal. Only in a few instances was improvement noted; in the great majority it did not seem to have any effect on the duration or termination of the disease.

It must be said that the majority of the cases were those in hospitals and had been ill for some time; consequently there was reason to suspect that secondary infections had occurred, and therefore the treatment could not, under these circumstances, be hoped to avail very much. Certainly the serum did not seem to make the little patients worse, and in that way it has been demonstrated that the serum treatment is not harmful. The best results were those in a few cases occurring in private practice where chil-

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dren were seen early. In some of these the effects were very happy indeed.

It is unfortunate that the antidysenteric serum has been given a broader application in the treatment of all intestinal diarrheas of children, known as cholera infantum. This is not warranted by our present knowledge; a cholera-infantum serum is yet to be discovered. If we are to draw any conclusions from the serumtherapy in adults and apply these to cases of bacillary dysenteries of children, we must state that the antidysenteric serum will have no effect upon any disease other than that caused by the dysentery bacillus. Further, it is believed that, in view of the difficulties which will be encountered in the treatment of diarrheal diseases of child-life, and also when we take into consideration the lack of resistance, the profound and rapid structural changes occurring after infection, that it can be hardly expected to yield as good results in these cases as has been observed in those of adults. Many observations must therefore be made both with regard to the etiological significance of the dysentery bacillus observed in the summer diarrheas of children, and also the serumtherapy must be extended to a much larger number of cases before we can arrive at any conclusion as to whether it is to be of benefit or not. There will, of course, be a great deal of hesitancy on the part of the private practitioners to employ this serum in cases of doubtful diagnosis. It is believed that the majority of cases of summer diarrhea will be for the next few years treated practically in the same way as is now being done.

The parents of the child apply to the private practitioner for some simple remedy to correct a diarrhea. This will in the majority of instances be prescribed without the physician being called to see the case, he being called only when the child becomes worse. It can be readily seen that these cases will present practically the same difficulties as those seeking hospital relief, as such cases will have been ill long enough for secondary infections to occur. It appears, then, that the only way in which the full value of the antidysenteric serum would be established would be through the agencies of municipal or State boards of health and hospitals where the facilities are available for making the diagnosis and administering the serum. It will therefore be some time before the importance of the diagnosis and treatment of these cases will have been fully realized even by the boards of health, not to mention the private practitioners.

From a public-health standpoint it is very important to know the behavior of the dysentery bacillus in the non-epidemic state. The so-called sporadic cases of bacillary dysentery are not without importance. Observations made in the hospitals of Philadelphia, Baltimore, and of New York during the winter months of 1901-1903 demonstrate that quite a number of cases of dysentery of a mild or atypical type have been encountered. If special search had not been made for these, in all probability they would have been passed over as unrecognized. These cases are doubtless the inter-

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mediaries, and are responsible for the continuation of the disease from one source to another. Not all cases of dysentery present the same clinical symptoms. They may be mild and severe even in a given epidemic. These mild cases in all probability are responsible for the distribution of the organism just as much so as mild cases (ambulant) of typhoid fever. The extracorporeal existence of the dysentery bacillus has not yet been sufficiently studied to know just how viable it is, but so far as known there is a close connection between it and food and water; and, further, that it has been shown by Conradi[28] that its behavior in an epidemic is practically the same as that of typhoid. Certainly there is some relation existing between the bacillus and the food and water supply in Japan, and protective measures directed to the correction of these have shown good effects. The quarantine measures enforced against epidemic dysentery in that country are as strict and on the same lines as those for cholera.

Vaccination has been practiced to some extent in Japan after Shiga's method; that is to say, a prophylactic vaccine is made by using a certain quantity of the dead dysentery bacilli only. So far as it has been tried it appears to have quite as good a protective power as those following the injections of the plague prophylactic. Only recently the Japanese mortality authorities have administered these protective inoculations to a whole army corps, but what will be the outcome of such cannot at this time be determined.

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VITAL STATISTICS, THE FIRST REQUISITE TO GENERAL AND LOCAL SANITARY GOVERNMENT.

By John S. Fulton, M.D.,

Baltimore.

ANNUAL ADDRESS BEFORE THE ASSOCIATED HEALTH AUTHORITIES OF PENNSYLVANIA, HARRISBURG, FEBRUARY 14, 1905.

SOME months ago I read a statistical paper on pneumonia, a disease which has been of late frequently headlined as the new "captain of the men of death." Among those who discussed the paper was my friend, Dr. Benjamin Lee, the wise and well-seasoned secretary of the State Board of Pennsylvania. His opening remark was one of those vivid and humorous sayings that we are apt to hear when Dr. Lee stands up to speak. He said that he had always thought that a State Board of Health without a complete plan of vital statistics is a "truncated animal." A friend of Charles Kingsley said that whenever Kingsley began by saying "I have always thought," he was going to say something which had just that moment occurred to him. I dare not say this of Dr. Lee, but what he says has usually a note of spontaneity which convinces us that his words are real sparks loosed from his mind by the impulse of the occasion. This matter of vital statistics is so near to his heart and has been so long exercising his brain that the trenchant sayings which he must have uttered first and last, if collected in one paper, would be about the best rapid-fire argument on this subject ever addressed to a stubborn public. This weird conceit of a State Board of Health as a truncated animal seems to me peculiarly apt. Possibly this is an exceptionally healthy Commonwealth, but I doubt it, and I am sure that Pennsylvania cannot prove her salubrity. Possibly Pennsylvania is, on the whole, a remarkably unhealthy Commonwealth. At any rate, if the charge were made, it is beyond the power of the great State of Pennsylvania to disprove it. Perhaps you are not worse off in a general way than the sister States whose accounts of life and death are carefully kept day by day and year by year, but I dare say that in some of the particulars of mortality you are worse off than some of those States, and I leave it to you to say whether it would not be good business to be informed about such particulars.

I am inclined to suspect that this great and necessary reform is delayed in Pennsylvania by certain circumstances which are in other respects most fortunate for you. Here is a noble Commonwealth, including many wealthy and prosperous cities. In these cities current mortality is recorded, and both authorities and citizens derive useful information from the records. Perhaps some influential people in Pennsylvania believe that independent, inco-

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ordinated, masses of vital statistics scattered in this way over the State—"compound comminuted" fragments of registration, as our friend Wilbur would call them—are all that the State needs in the way of vital statistics. But if a member of the general assembly of Pennsylvania should propose that the great material enterprises of this State should be turned back to the methods of 20 years ago, I suspect that you would send the author of that proposition back to the woods.

Go up to the State Library and learn of Pennsylvania's greatness from the census reports for 1900. Take down the volumes on agriculture, manufactures and mining, and note what the federal bureau has said about this State. Here are the States in alphabetic order. Next after Ohio comes Pennsylvania, and it must be a source of very great pride to even the humblest of your citizens to read the magnificent record of your operations in coal, iron, lumber, live-stock, and oil. This story, complete in every detail, distinguishes you among the States as very eminent in many things, and in some things pre-eminent.

Next take down the two volumes on vital statistics and see what is recorded about the active, brainy creatures who convert the products of farm, forest, and mine into Pennsylvania's wealth. The order of the States is alphabetic as before. Here is New Hampshire, next New Jersey, next New York. We are looking for Pennsylvania and are getting "hot," as the children say. New York, next Rhode Island. You turn the pages backward, but there was no mistake. Rhode Island stands next to New York. Pennsylvania is not mentioned in this business, for Pennsylvania does not know how many men she has lost in any year in any of the industries which make her prosperous. Look for some simpler kind of information about life and death in Pennsylvania. There are in the census reports complete lists of the States, beginning with Alabama and ending with Wyoming. In these lists Pennsylvania comes after Oklahoma. You find Pennsylvania, and run your finger down the left-hand side of the page to the item of your inquiry, and thence horizontally across the page to the place where you expect to find figures. Instead of the desired figures you find a star. At the bottom of the page is a note which explains the star. It says, "Data insufficient." The Pennsylvania pages are well set with asterisks, but afford little information. Such was the status of Pennsylvania in 1900—a giant in commerce and industry, but excelled by Rhode Island, and in the infant class with Maryland, Delaware, and Oklahoma so far as concerns correct accounting for the vast capital represented by human life.

What are the prospects for 1910, when the United States Census Bureau will again give a splendid account of your material opulence? In Maryland we tried to mend our fences in 1898, and we succeeded in passing a vital-statistics law. But the census of 1900 began in May, 1899, and Maryland was too late to be recognized with little Rhode Island and the other registration States. We

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worked hard and steadily in our vital statistics, and, in my judgment, we are now, after five or six years' work, entitled to be recognized among the registration States. Perhaps Pennsylvania can do better than this. It will be necessary to do very much better if this State desires to bring the business of vital accounting up to anything like the high standard which Pennsylvania has established in education, agriculture, manufactures, or mining.

Lest anyone should suppose from what I have said that Pennsylvania is very far behind the times, let me say that the practice of registration has in general been extremely slow in this country. If you should consult the census reports for 1880, you would find that every sort of registration was poor in those days. Even that accounting for the development of material resources, which in Pennsylvania has reached a great excellence, will be found but indifferently recorded in the publications of 20 years ago. With respect to vital data, there were in 1880 but two States able to furnish reliable mortality records. These were Massachusetts and New Jersey. In 1890 this number had increased to seven and in 1900 to nine. But since 1900 the practice of registration has received a tremendous impetus. In the annual conference of public-health officers the subject has been earnestly discussed almost continuously since 1896. There were in that year more than 30 State boards of health, having executive officers who were expected to render very valuable services and to record most convincing results. But nearly all these State boards were "truncated animals," and they knew it. Without definite and detailed information about mortality, they merely groped about their business. Of the nine States which composed the so-called "registration group," not more than three had laws which were quite satisfactory. The situation was indeed rather acute, seeing that the science of public health has now advanced well beyond the general considerations of hygiene, and must in future be chiefly occupied with the particulars of the subject—particulars which cannot be ascertained without complete and accurate data covering population, births, and deaths.

It is not remarkable that this question of registration has of late been impressed upon all the United States so effectively that a map showing the progress of registration since 1900 would be a striking exhibit. Remember that in 1900 no State south, and but one State west, of Pennsylvania had a rightful place in the registration column. I ask you to visualize in your minds a map of that part of the country which lies north of the Potomac and Ohio rivers and east of the Mississippi, and to note that in 1905 but two States in that area are not registering current mortality under a general law. Of these two States, one is the least and the other is almost, if not quite, the greatest in our distinguished family. It would be imprudent to say that all but two of the States in this area are registering their mortality as well as Massachusetts, Rhode Island or New Jersey, but it is safe to say that by 1910 they will be fully up

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with the procession. In other parts of the country States are strengthening their old and inadequate laws, and new States are enacting effective registration laws. In 1910 Iowa, Minnesota, Nebraska, Colorado, California, Oregon, Washington, Tennessee, and Florida will probably be abreast, or nearly abreast, of the times, and North Carolina, West Virginia, Kentucky, and Delaware will discover that they are behind the times. Meanwhile the Census Bureau, which formerly was new-created every 10 years, has become a permanent bureau in the federal Department of Commerce and Labor, so that the country, as a whole, is preparing to deal with the life, death, brain, and sinew of her teeming population in as businesslike a way as with cattle, grain, coal, iron, or timber.

Pennsylvania is not uninformed about the activity of this great reform in the matter of vital statistics. Indeed, this was one of the first States to perceive the necessity for keeping account of the yearly mortality, and one of the oldest American laws on the subject is, I am told, upon your statute books. But you long ago found that this law was inefficient, and all attempts at improvement have languished, until a few years ago when you elected the distinguished gentleman who is now the governor of Pennsylvania. Early in his career as chief executive Governor Pennypacker became impressed with the necessity of a complete system of vital registration for his State, and the bill now before your legislature has, it is said, his hearty support. Surely, then, I may assume that all debate is concluded as to the necessity for such a law, and that the questions now before this Commonwealth concern only the specific provisions of the measure.

An authoritative guide to the formulation of effective laws on vital statistics is found in Census Bulletin No. 21, and with its aid any intelligent lawyer can do what any number of lawyers cannot do without it—make an effective law on vital statistics. Those who made this guide took into consideration all the registration experience of the United States, and that experience is surprisingly extensive, notwithstanding the backward condition of American registration. Having in mind the diverse conditions presented by the sovereign integers of this republic, the authors of the bulletin avoided all minor details and pointed out only the essential features of such a law. I shall not speak of the contents of this bulletin, for they were forcibly presented before this body a year ago by Dr. Wilbur of Lansing, who knows as much about this sort of legislation as any man now living in America.

Recalling the difficulties encountered in Maryland during the construction of our own vital-statistics law, I am impelled to dwell for a moment on the crucial error which we made in 1898, and which has been made practically everywhere in the early history of such legislation. In 1898 we failed to convince the Maryland

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assembly that the registration of deaths could not be accomplished by simply requiring deaths to be certified by physicians and returned at once to local registrars. In vain we pleaded that it is absolutely necessary to require a burial permit to be issued in every instance before it became lawful to inter or otherwise dispose of the dead body. The legislators thought that they knew how mortality returns ought to be collected, and they gave us a law without the burial-permit provision. Under that law we collected monthly returns for two years. The returns cost more and were worth less than those of any year since 1900, when the legislature repaired the error of 1898 by incorporating in the law a burial-permit requirement. The objection to burial permits came in Maryland, as is the case always, from country members, who thought that this requirement might bring hardship upon some isolated family invaded by death at a time when severe weather or other uncontrollable circumstance might make compliance with the law very difficult or impossible. It was said that in a sparsely-settled country there is no need of immediate registration on the spot and at the time of death. Perhaps such views have not been advanced, or else have little influence, in Pennsylvania, but if I were obliged to controvert this argument I should turn at once to the sanitary history of Pennsylvania for illustrations of the fact that the safety of health in towns and cities is intimately dependent upon the health of neighboring rural districts, and that unmarked illness in a lonely cabin or camp is too often the creeping spark which kindles an urban epidemic. I should recall the tragic story of typhoid fever at Plymouth in 1885, when the careless disposal of excreta at an isolated house on a distant hillside let loose a frightful energy to ravage the town. Such illustrations have been furnished by many parts of this country. It is a very common error in public-health work to consider sanitary problems as of interest only in their immediate environment. Of several destructive errors possible in the formulation of a registration law none is so certainly fatal as the omission of a burial-permit requirement. The records must include every death, no matter where it occurs. To do less than this is to omit a substantial debit item from the public accounts, it is to deny protection to certain private interests of those who survive, and it is to withhold from your health authorities, both State and local, a sort of information which is absolutely necessary to give their work definite direction and measurable effect.

The bill now before your assembly is in all respects an admirable measure. So far as mortality registration is concerned it is as good as any I have seen. The provisions for registration of births seem to me better than are found in any law now in force in this country. Sometimes it is dangerous to make a statement of this

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sort. When the consent to new measures is somewhat reluctant, legislators take alarm if it is suggested that the proposed laws are better than those of other States. Legislatures, as a rule, prefer to feel their way in dealing with new subjects or subjects upon which they are not fully informed. Unless the vote which you expect is very sound, it will be better not to spread abroad the suggestion that Pennsylvania is about to become a leading exemplar of modern registration methods. There will be great satisfaction in Washington, and you will receive congratulations from every registration office in the country if this bill passes the Pennsylvania assembly with its essential provisions unimpaired.

Perfectly satisfactory registration of both births and deaths is not now accomplished by any State in this Union. Great progress has been made in collecting information concerning the causes of loss of population, but the sources of population-repair have not been successfully studied. This neglected phase of vital statistics has of late become deeply impressed upon the national government—insomuch that Congress two years ago passed a resolution addressed to the governors of all the States asking for the collection of full and complete data concerning the natural increase of population. We have discovered that our growth through immigration presents problems so vital that we dare not cease scrutinizing, in turn, every individual of the thousands thronging our shores. But in the natural increment of population by birth there are problems just as serious, though we are in no position as yet to consider them. If the registration of births and deaths were useful only in hygienic relations, the records would still be worth their cost, but it is in their relation to material progress that vital statistics are now being recognized. Indeed, the sanitary relations of vital statistics are merely incidental. Registration was first undertaken in England in the thirties, not by sanitarians, but by political economists, and for economic reasons. That registration opened up a vista of preventive medicine that was a surprise—so much of a surprise that, when the death-rates of great cities had been cut down from 40 to 20, the hygienic importance of registration obscured its original economic purpose. We are now coming back toward the earlier view. We shall never take the work of registration away from sanitarians, for they have shown particular aptitude in making the data serviceable. But the political economist has renewed his interest in vital statistics. The wealth of nations is in the vital energy of the people. The business of government is not summarized in statements of foreign and domestic trade, of corn, cattle, coal, cotton, oil, tobacco, iron, lumber, beef, and the infinite catalogue of material products, but must include detailed data concerning the living factors of national prosperity. Nor is it enough to know simply that so much life is expended, and that the

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life-capital is by such and such figures recruited in a year's work. A few days ago a Russian newspaper suggested that the tangled affairs of Russia should be handed over to American receivers, as the Americans display extraordinary ability in the management of great enterprises. Now, the United States and Russia are in some respects alike. Each has experienced in the past half-century very marvelous growth of population; each has impressed other civilized nations as a formidable power; both of them, our own country and Russia, are quite ignorant as to the composition and vital history of their populations. In these respects they are alike. In mastery of the details of business the United States is no doubt superior to Russia, but in population both have grown rich without knowing, or trying to know, the sources of their wealth. Germany and England, however, compelled by circumstances, are fully informed on the composition and character of population, on its loss and renewal, and on its adaptability to all pursuits. Japan, having studied carefully every phase of political science in all parts of the world, has seized upon every valuable idea and applied it with such skill and energy that she has amazed the world by withstanding the strain of a war which at its onset seemed on Japan's part suicidal. If American brains should be employed in the service of Russia at this time, it is certain that the business of Russia would be conformed to American methods, and precise information would be required on education, agriculture, mining, manufactures, capital, and labor; but the bald statement that the people of Russia are so many millions would be found of no service whatever. Months ago mere millions of population ceased to be what the insurance men call "a good talking point." Where are these people? Of what sort are they? How are they distributed as to locality, age, race, sex, occupation, education? What are the detailed relations of death to locality, age, sex, occupation, disease, war? How are the numbers recruited? What stocks are thriving? What stocks declining? Is the balance of migration favorable or no? What parts of the national business are conducted on a winning, and what on a losing basis? The vital energy of nations must be adjusted intelligently, and not at random, to the world's work, and in peace, no less than in war, the strength of nations depends upon the intelligent adaptation of men and means to aims and ends.

If the bill now pending in your legislature becomes a law without impairment of its provisions, it will be a matter of congratulation not alone for Pennsylvania, but for Maryland and for every other State. It will be a long step toward that efficiency of political organization which we must perfect in every State before our country can be in fact strong and sane, with the strength and soundness of mastery over her magnificent resources.

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Current Literature.

REVIEW IN MEDICINE.

Under the Supervision of Thomas R. Brown, M.D., Baltimore.

THE BACTERIOLOGY OF ARTICULAR RHEUMATISM.

Beattie (*British Medical Journal,* December 3, 1904) gives the results of his investigations, carried on in the pathological laboratory of Edinburgh University, in regard to the micrococcus rheumaticus. As is well known, this micro-organism was first described in 1903 by Beaton and Walker in considerable detail, and according to them was the bacterium which is the causal factor in acute articular rheumatism.

Beattie in his experiments used two different strains of micro-organisms—one obtained from the synovial membrane of a girl with acute rheumatism and recovered from the vegetations of an endocarditis experimentally produced in a rabbit, the other from a culture sent by Dr. Paine. The microscopical and cultural characters of the two were practically identical, the only difference noted being that the coagulation of milk was more rapid in the case of the latter micro-organism. The characteristics of the micro-organism are as follows: It is a small micrococcus occurring in the tissues and cultures in pairs or in short chains, the latter being more marked in growth in milk bouillon. It is smaller than the ordinary streptococcus, and incapable in any medium of producing the long chains so characteristic of the latter bacterium. Many of the organisms are rather oval in shape, and resemble the pneumococcus more than the streptococcus. No capsule could be demonstrated. Degeneration forms are met with fairly regularly, but by no means so frequently as in the case of the streptococcus. The micro-organism stains readily with all the aniline dyes and is not decolorized by Gram's method of staining.

Beattie gives in detail the cultural peculiarities and characteristics of the bacterium, which, however, need not be gone into here.

The most interesting results were those obtained by the experimental inoculation of animals with this micro-organism, Beattie's results being absolutely confirmatory of those obtained by Paine, Poynton, and others. Intravenous injections in animals produced endocarditis, polyarthritis, and chorea, the polyarthritis usually developing in about three days after the inoculation. With subcutaneous injections, even in large doses, no suppuration was produced in Beattie's experiments.

As to the question of whether or no this micro-organism shall be classed as a streptococcus (although if we use the term in its generic sense no fault can be found with it), nevertheless Beattie

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insists that with most people streptococcus has a specific meaning, and as the results obtained by inoculation of the organism described in this article are specifically different from those obtained with the streptococcus, Beattie insists that a specific name had better be used, such as the micrococcus rheumaticus, as proposed by Beaton and Walker. Beattie also especially mentions certain points in the cultural characters and vitality of the micro-organism which absolutely distinguishes it from the streptococcus. Beattie in his conclusions does not claim that because this organism produces endocarditis it is the causal organism of this disease, but he does claim that it can be isolated from cases of typical acute rheumatism; that it can be grown outside the body, there showing characters in some respects specific; that in inoculation in animals it produces a combination of lesions which are similar to those of acute rheumatism in the human subject, sometimes especially affecting the joints, sometimes the heart, sometimes producing chorea, sometimes producing a combination of these conditions, and that from these lesions the organism can be recovered in pure culture. On these grounds Beattie regards the micrococcus rheumaticus as a special organism, causal in acute rheumatism.

* * *

THE APPARANT INCREASE OF PNEUMONIA.

Fulton (*Journal of the American Medical Association,* January 14, 1905), discusses in a most thorough and scientific manner the question of the incidence of pneumonia during the last five or six decades. The value of this communication is especially great because of the generally prevailing notion among physicians and laymen that this disease is constantly on the increase, which view, as Fulton rightly says, rests on no other evidence than the apparent mortality rates and ratios. Fulton first gives a careful history of the mortality registration in this country, especially as regards pneumonia, illustrating his remarks with charts and with statistics. These show in a graphic way the mortality from pneumonia in various States of the Union, divided, as regards individuals affected, up to five years of age, from 5 to 65 years, and over 65 years. After discussing at some length the factors which prevailed to make the reports of pneumonia less frequent in the earlier than in the latter decades, notably the symptoms which mask pneumonia in childhood and in old age, Fulton takes up seriatim the statistics in various cities in this country, and from his careful and thorough digestion of this enormous amount of material concludes that there is no proof that lobar pneumonia has grown more prevalent or more fatal at any period of life, with the possible exception of pneumonia in children under five years of age. Fulton's conclusions in regard to this extremely important subject are worthy of being given in full, and are as follows:

"1. The returned mortality of the United States for ages between 15 and 60 during the past 20 years shows a diminishing mortality from the class of respiratory diseases commonly returned as

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pneumonia. Of the pneumonias occurring in this age-period a large majority are true lobar pneumonia. Fifty-eight and one-half per cent. of the population of the United States and 66.5 per cent. of the population of cities are between the ages of 15 and 60. The incidence of lobar pneumonia on a major part of the population is therefore diminishing.

"2. The returned mortality of the United States for ages above 60 indicate that the mortality from the class of respiratory diseases commonly returned as pneumonia has increased from 21.9 per cent. to 22.6 per cent. in 10 years, the population at the same age in the same period having increased from 6.2 to 6.6 per cent. The urban mortality for the same age has grown in 10 years from 16.1 per cent. to 19.5 per cent., and has been accompanied by an increase of population in that age-period laterally from 5.23 to 5.27 per cent. Several pathologic conditions added to the group of pneumonias, and not provided for in statistics, are included in the returned mortality of pneumonia for ages above 60. For 6 per cent. of our total population lobar pneumonia may have increased in the past 10 years, though satisfactory evidence of an increase has not been offered.

"3. The returned mortality of the United States for ages under 15 (about one-third of the total population) shows an apparent rise of mortality for the group of respiratory diseases commonly classed as pneumonia. The acute respiratory diseases of children were in former years commonly mistaken for affections of the nervous system. Year by year for 30 years increasing numbers of deaths formerly found in the indefinite accounts and in the class of nervous diseases have been transferred to the class of respiratory diseases, and especially to the pneumonia account. Of the mortality recorded as due to pneumonia under the age of 15 years not more than 10 per cent. is due to lobar pneumonia. A small, though considerable, incidence of lobar pneumonia in children under the age of five has come into view of late years, but there is no evidence that lobar pneumonia has increased in this age-period. The remaining 90 per cent. of the recorded mortality ascribed to pneumonia includes the conglomerate group of broncho-pneumonias, nearly all of which are secondary or complicating causes of death, and should be referred in the mortality tables to the primary causes of death.

"4. Since 1890 a new cause of infantile mortality has come into view, an acute respiratory infection, attacking infants of two years old and under, commonly returned under the diagnosis of pneumonia, sometimes returned as due to a disease of the nervous system, and probably due to influenza.

"5. The mortality registration of American cities is in general very poor. The crude rates and ratios offered by certain cities as evidence of a rising pneumonia mortality are inconsistent with the mortality statements concerning other causes of death and with the characteristics of the populations concerned. They represent

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a perversion of statistics which must eventually bring discredit on American mortality registration."

* * *

THE TREATMENT OF CANCER BY SUBCUTANEOUS INJECTIONS.

Renault (*La Presse médicale,* November 16, 1904) discusses the results obtained by Adamkiewicz and others in the treatment of carcinoma by the method of subcutaneous injection originally described by Adamkiewicz. According to the Viennese professor, carcinoma must be considered a parasitic affection of which a special toxin isolated by him from the carcinomatous secretion and designated cancroin is the material which destroys and affects the normal tissues. From his point of view the chemical composition of this substance is a combination with carbolic and citric acid of a trimethylated base of ammonium. His treatment consists in subcutaneous injections of cancroin, the dose being progressively increased from ½ to 2 c. cm., the dose and number of injections being regulated by the reaction produced and the improvement noticed. As a rule, the effects are very rapid and the results obtained are manifest very soon.

Recently Adamkiewicz (*Aertzliche Rundschau,* 1904, Nos. 21 and 24) reports 18 new cases which he has treated by this method, including seven cases of cancer of the breast, two of the uterus, two of the intestines, two of the stomach, and five of various other portions of the body. In regard to the first of these, the majority of cases had already undergone one or several operations when they were seen by Adamkiewicz. In these cases the improvement noted after the injections was very marked. In two cases of epithelioma of the cervix uteri the improvement noted after the injections is extremely marked, and was characterized not only by an improvement in the general health of the patient, but by the complete cessation of the local symptoms, notably pain and hemorrhage. In all these 18 cases marked amelioration of symptoms and in some apparent cure were produced, notwithstanding the fact that one of the patients was 79 years old, another 72.

According to Renault, these and previous observations of cases treated by the same method demonstrate beyond a doubt that cancroin has an undeniable effect upon cancer, whatever its situation. Adamkiewicz has never pretended to claim that by this method all cases of cancer may be cured. He does, however, affirm that his serum possesses sufficient power to eliminate the parasite and in the least hopeful cases to undoubtedly prolong life. So much adverse criticism has been published of late in regard to the parasitic theory of cancer that one cannot help feeling indisposed towards accepting any treatment based on such an hypothesis; nevertheless the clinical results obtained by Adamkiewicz and others are so favorable that the method should not be generally condemned, but more cases should undoubtedly be tested by cancroin, so that its real effects may be more definitely determined.

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THE EXPERIMENTAL STUDY OF CONSTIPATION.

Glaessner (*Wiener klinische Wochenschrift,* 1904, No. 45) gives the results of his experiments on animals in regard to constipation which he has been recently carrying on and which he reported to the Medical Society of Vienna on November 4, 1904. After first insisting upon the importance of a better comprehension of this condition, and the fact that all grades of constipation, both as regards degree and variety, are to be met with, he takes up first the various views held in regard to this condition, notably the view first suggested by Bouchard and later insisted on by Müller, that the majority of cases are characterized by an autointoxication from the gastrointestinal tract, which is of especial importance in the explanation of the multitude of symptoms produced in this condition. It was Nothnagel who first insisted that in some cases the condition might be purely functional—in other words, where the etiology of the condition is to be found in disturbances of the intestinal nerve and muscle apparatus, a view which Schmidt and Lohrisch have considerably emphasized. According to the last of these it is due to the presence or the formation of substances not sufficiently irritating that this type of constipation is produced. Another type is that in the etiology of which changes of a chemical nature play an extremely important *rôle.*

Glaessner has devoted his attention largely to attempts at producing constipation artificially in animals and to studying the deviations from the normal metabolism produced by this artificial constipation. At first he attempted to produce this by the administration of enormous doses of opium, but he found that no definite changes in the secretions were produced by this method. In the second place he produced an artificial stenosis of the intestines by surgical means, but he found here, again, no essential change produced. Recently he has followed the suggestion of Prutz and Ellinger and produced constipation by the production of antiperistalsis, that is, by section of a certain portion of the intestine and its anastomosis in the reversed direction. By this means lasting constipation was produced, associated with a marked dilatation of the proximal part. Animals treated this way became gradually more and more emaciated, notwithstanding the administration of large amounts of food and the presence of a good appetite.

Very careful determinations were made regarding the various secretions in these cases, which, of course, presupposed the careful weighing of all the food administered. Nitrogen determinations of feces and urine were made—in other words, the attempt was made to determine just exactly what was the effect upon the bodily secretions of the gastrointestinal autointoxication produced by this extreme constipation of experimental type.

The special change noted was that while under normal conditions the nitrogen in the feces was present to a large extent as coagulable albumen, in the cases of experimental constipation this is not the case, but the amounts of coagulable and noncoagulable albumen were approximately the same. There were also present more

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products of proteid destruction than under normal conditions, especially of a basic nature; also there was a diminution in the stools of the animals experimented on of nitrogen and of total dried residue.

The urine showed a gradual increase in nitrogenous excretion, but the most interesting fact shown in this connection was the fact that although the ammonia excretion was normal immediately after a stool, there was a steady increase in its excretion from that time until the next movement, sometimes reaching an amount more than twice the normal. This is peculiarly interesting in relation to Czerny's views regarding acid autointoxications.

While these results are not especially striking in their practical application, they are of interest in suggesting some of the effects which may be due to constipation, in the hope that further investigations may be stimulated thereby.

REVIEW IN SURGERY.

Under the Supervision of Wm. A. Fisher, M.D., of Baltimore.

TOTAL EXCLUSION OF THE LARGE INTESTINE IN COLITIS ULCEROSA. Ludwig Moszkowicz, M.D. *Mitteilungen a. d. Greuzgebeiten d. Med. u. Chir.*, Band XIII, Heft. 4 and 5.

Moszkowicz opens his paper with an enumeration of the operations for ulcerative colitis as follows:

1. Enteroanastamosis: anastamosis between ileum and sigmoid or ileum and rectum, producing a total exclusion of the colon above the anastamosis; 2. Anus in the ileum; 3. Anus at cecum or on ascending colon; 4. Anus on descending colon or sigmoid; 5. Valve fistula at cecum.

Nehrkorn prefers a colostomy placed as low as possible, since the discharge is less annoying to the patient, and is opposed to any of the forms of anastamosis on account of the weak condition of the patients, and because without a fistula no local treatment can be carried out.

Moszkowicz gives the history of a patient upon whom he did a colostomy in the transverse colon (as recommended by Nehrkorn) for ulcerative colitis. The patient improved rapidly under treatment with irrigations and gained weight; the stools reduced in number, and only occasionally was there any blood passed through the anus. At the end of six months, however, the patient declared that she could not stand the artificial anus any longer. For this reason half the transverse colon, the descending colon, and sigmoid were excised, but the patient was badly shocked and died two days later. At autopsy it was found that the colon was ulcerated from the colostomy as high up as the ileocecal valve. Therefore in this case, as in many others, a fistula in the cecum or in the ileum would have been better.

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The great objection of patients to a fistula, especially in men of middle age who would be prevented from engaging in almost any occupation, and the possibility of cicatricial stricture following deep ulceration, induced Moszkowicz to undertake a series of experiments on animals to determine whether an operation which would not be too long or too severe for patients in a weakened condition could not be devised which would entirely exclude the large intestine and at the same time allow the feces to pass out through the anus under control of the sphincter.

He therefore operated upon five animals in the manner described later, except that in the case of the first two no attempt was made to form a substitute for the ileocecal valve. In the case of the last three animals a valve was formed which was very successful, the latter animals having stools of much firmer consistence and much less frequency. All the animals died, but from causes which could be prevented in man.

The experiments proved two important points—*i. e.*, the operation was well borne and there was continence of feces. The technical details of the operation were worked out on the cadaver as follows: The patient is first placed in the lithotomy position, and a transverse incision about 5 cm. long is made close to the border of the anus anteriorly. In men the upper border of the prostate is exposed by blunt dissection, then the base of the bladder and seminal vesicles. This brings you to the recto-vesical fold of the peritoneum. In women the dissection of the rectum from the vagina is easier, and brings you to the recto-uterine fold of the peritoneum. The perineal wound is then packed with iodoform gauze and the patient put in the Treudelenberg position for laparotomy—median incision. The ileum is divided transversely about 20 cm. from the ileocecal valve, the mesentery being longer at this point. The peripheral end is then closed with sutures, and the central end covered with gauze held in place by a silk suture whose ends are left long. The ileum may be lengthened about 10 cm. by carefully making a nick in the mesentery, which allows it to pull well down to the perineum without tension. The *cul-de-sac* of Douglas is next exposed and the peritoneum incised over the iodoform gauze, which is seen shining through. The end of the ileum is pushed through this opening, and the ends of the silk suture are caught in forceps and pulled through the perineum. About 20 cm. above the end of the ileum a slight invagination of the gut is made and held by sutures, forming a ring-shaped eminence of mucous membrane, which is to form a substitute for the ileocecal valve. The abdominal wound is then closed and the patient again put in the lithotomy position. The external sphincter is then carefully separated from the mucosa of the rectum, and the end of the small intestine is drawn through inside the sphincter and sutured to the skin and mucous membrane of the rectum. After the colitis is cured the ampulla of the rectum may be used by dividing the septum between it and the ileum.

In the milder cases of colitis Moszkowicz recommends a Witzel

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fistula at the cecum, but in the severe cases the method above described is indicated.

* * *

ON THE RESULTS OF OPERATIONS FOR VARICOSE VEINS OF THE LOWER EXTREMITIES. Robert Kennedy, M.D. *British Medical Journal*, October 29, 1904.

The two important points in the pathology of varicose veins of the lower extremities, as brought out by the author, are the incompetency of the valves and the liability of the tributaries of the internal saphenous to dilate on account of the lack of muscular support.

In not one of the 27 cases reported did the condition appear to be due to those causes which are generally considered as etiological factors, *i. e.*, abdominal pressure from tumors, gravid uterus, etc., disease of ths heart and liver, or to occupations involving long standing. The condition seems rather to be due to a congenital incompetence of the valves and also a deficiency in the elastic coat of the vessels themselves. This view is supported in the cases under consideration not only by the condition of the valves of the internal saphenous in the thigh as found at operation, but also by the ages at which the varices made their appearance. In the 27 cases recorded, 17 occurred between the ages of 6 and 20, eight between the ages of 21 and 30, and only two above the age of 30.

In considering treatment the author is in favor of elastic support only in the case of old people or in those cases in which the disease is a consequence of some associated condition. In young people some method of operation should be adopted which will result in a permanent cure. The older methods of injection and simple excision of the varices do not suffice. Treudelenberg's operation, which is based upon the fact that varices below the knee are produced by the flow of blood into the saphenous from the femoral on account of the incompetence of its valves, has not proved altogether satisfactory in its ultimate results.

Schede's method of complete circular incision below the knee, with ligation of all the vessels, has also been unsatisfactory, because the newly-formed vessels in the scar may dilate from the pressure of the column of the blood above. The method which the author practices is to remove the whole internal saphenous vein in the thigh, beginning about one and a-half inches below the salpenous opening, and removing the prominent varices below the knee.

Twenty-four of the 27 cases operated upon have been traced for periods varying from one and a-half to seven years. In 10 cases some operation other than the one the author describes was used with the following results: Three cases recurred completely and five had varices still present, although much reduced in size, and produced only slight symptoms. In 14 cases the method described by the author was used, with a perfect result in periods varying from one and a-half to five years.

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POST-OPERATIVE INTESTINAL OBSTRUCTION, WITH A REPORT OF THREE CASES. Charles H. Peck, M.D. *Annals of Surgery*, October, 1904.

The facts which form the basis of the author's communication are drawn from three cases of his own, three unreported cases of which he has personal knowledge, and other cases recently reported. All through the article stress is laid upon the necessity of an early diagnosis and on the fact that palliative treatment, when not early successful, should be immediately followed by operation. The majority of cases follow appendicitis or salpingitis with or without drainage, the cases in which drainage is employed being the most frequent. The cases are divided as they occur within the first three or four weeks after operation or at a much later date. As one would expect, the greater number belong to the first class, and these offer the best results from palliative and prophylactic treatment. In the early cases which are due to kinks and bends an incomplete obstruction may become complete on account of the accumulation of gas in the afferent loop, brought on by indiscretions in diet, etc. If not relieved promptly by palliative means, fresh adhesions form, which render an operation imperative. In case of threatened obstruction, if peristalsis is kept active, the patient can often be carried past the danger-point of obstruction, as it is well recognized that the adhesions which are first formed almost entirely and often completely disappear. Patients should, therefore, be carefully watched during the period of convalescence from intraperitoneal inflammatory conditions; simple diet should be given, and the bowels carefully regulated.

The cases which occur late are less suited to palliative treatment, because the adhesions and bands have become quite dense. In these cases non-operative measures should only be tried tentatively, and in case of failure an operation for the relief of the obstruction immediately undertaken. In cases in which surgical interference is necessary following an operation for appendicitis an incision through the right rectus is preferred; in those following pyosalpingitis a median incision gives the best exposure. The site of the obstruction should be found quickly and without evisceration if possible. It may be necessary to allow the escape of feces and gas through an incision in the gut, which should be immediately closed and cleansed unless it is determined not to attempt to find and relieve the obstruction. After relieving the obstruction, if the intestine has been damaged and is in danger of perforation or gangrene, Peck prefers resection and end-to-end anastamosis to an artificial anus. Drainage should be avoided if possible.

Conclusions. — The possibility of post-operative obstruction should be borne in mind after all abdominal operations, especially those for acute inflammatory conditions. Trauma and handling should be reduced to a minimum. Drainage should be avoided whenever possible, and if used, cigarette drains are preferable. Particular attention should be paid to diet and regulation of the bowels during convalescence. If palliative measures are unsuccessful after a few hours' trial, an operation should be promptly resorted to.

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REVIEW IN NEUROLOGY.

Under the Supervision of Robert Reuling, M.D., Baltimore.

CHRONIC CARBON BISULPHIDE POISONING. E. Koster. *Deutsch. Zeitschrift für Nervenheilkunde,* 1904, XXVI, No. 1.

The author reports four well-marked cases showing the toxic action of carbon bisulphide on the nervous system. The symptoms in many respects were so pronounced as to be fairly specific of this form of toxemia, a fact which many observers deny; especially that this gas has any pronounced poisonous action which gives rise to a well-defined clinical picture. He finds that this form of poisoning is especially frequent in the rubber factories about Leipzig, where the manufacture of rubber articles of various kinds is an important industry, employing many women and young girls. The cases vary in severity from the lighter toxemia, characterized by slight dizziness and depression, to the severer forms, in which crying spells and hysterical manifestations are not infrequent; also peculiar paresthesias, such as itching or numbness of the skin, etc. The prodromal stage may, however, be of a different type, so that the person is very hilarious and restless, at the same time feeling a painful, tired sensation in his muscles, especially those of the lower extremities and calves of legs. The increase of toxicity soon leads to a very flabby condition of the entire muscular system, especially the peroneal group, followed later by complete paralysis. The psychic disturbances are very variable, as stated—from light depression to hilarity or to violent mania. Koster does not believe that a peripheral neuritis alone explains the clinical picture, but that cellular degenerations of inhibitions in the central nervous system can only explain the pupillary disturbances, psychic phenomena and the marked tremor which is present in almost all cases, and which persists after other symptoms have cleared up. The poison enters the system by way of the respiratory tract, and after entering the blood-current makes its deleterious action felt throughout the nervous system in general.

* * *

FATAL POISONING DUE TO SKIN ABSORPTION OF LIQUID SHOE BLACKING (NITROBENZOL), WITH AUTOPSY REPORT. Willard F. Stone, B.Sc., M.D. *Journal of the American Medical Association,* October 1, 1904, Vol. XLIII, No. 14.

This case is of special interest, first, because of its rarity; secondly, since it reiterates the danger attendant on the use of cheap products of coal-tar distillation as solvents for aniline dyes in certain manufactured articles.

History of Case (by Dr. A. W. Wheeler and Peter Donnelly).—W. R., aged 22 years, male, salesman, in excellent health, was taken suddenly ill in a cafe about 12.30 A. M., March 20, 1904. He had attended a dancing party. While in the cafe he remarked to some

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friends he did not feel well, but his friends noticed nothing except extreme pallor. While standing to put on his coat he suddenly seemed to faint, and fell to the floor. He complained of no pain, but felt dizzy and faint, and shortly after vomited. He went into a deep stupor, and at 3.30 A. M. could not be aroused by the physician who saw him. Pulse of small volume, rate 130, and skipping one beat in about 25. A slight convulsion occurred and sudden dilatation of left pupil. Death took place at 4.45 A. M.

Autopsy six hours after death. Weight of body 160 pounds; both feet discolored (black to above ankles); no edema of lower extremities; heart, lungs, and viscera in general normal, except a slight suggestion of acute parenchymatous nephritis.

Brain.—Meningeal vessels congested. Internal capsule normal; no area of softening of any portion of the brain, nor evidence of hemorrhage. Gastric mucous membrane covered by a thin layer of mucus, and contents had a peculiar penetrating odor suggestive of rotten bananas. An analysis of the gastric contents and of the urine by the coroner showed the presence of nitrobenzol. As this is a very poisonous liquid, the author advises against the careless use of the modern liquid blacking, especially the habit of placing the same to the lips, as so many shoeblacks do. Just why more persons are not poisoned the author confesses is hard to explain, being most likely due to the fact that only small amounts of nitrobenzol come in contact at one time with the bootblacks' mucous membranes.

This young man had bought a pair of patent leather shoes with tan-cloth tops. Before going to the dance he soaked the tan-cloth uppers with shoe polish, and thus it is supposed poisoned himself.

NITROBENZOL, OR ESSENCE OF MIRBANE. (Taken from Reese's "Medical Jurisprudence and Toxicology" by the Reviewer.)

This substance is the product of the action of nitrous acid on benzol. It is a pale-yellow liquid with a strong odor of bitter almonds. It is used in perfumery and confectionery as a cheap substitute for the oil of bitter almonds. It is a powerful narcotic, producing effects resembling those of prussic acid, although much slower in its operation, requiring four or five hours before death occurs, which is usually preceded by coma, as in apoplexy. This poison operates more rapidly and powerfully when inhaled in the form of vapor. In a fatal case it may be generally identified by its strong odor.

Chemical Analysis.—It is distinguished from the oil of almonds, which it so strongly resembles in smell, by pouring a few drops of each upon a plate and adding a drop of strong sulphuric acid. The oil of bitter almonds acquires a rich crimson color, with a yellow border, while the nitrobenzol is not affected. It gives none of the reactions of hydrocyanic acid with the usual tests for this acid.

When associated with organic substances, as in the stomach, it may be separated by first adding sulphuric acid and then distilling.

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EXCISION OF THE SUPERIOR CERVICAL GANGLION OF THE SYMPATHETIC GANGLION FOR SIMPLE GLAUCOMA. Colman A. Cutler. *Medical News*, January 28, 1905, Vol. LXXXVI, No. 4.

The author's article begins by presenting these two questions to the reader:

1. Is the eye ever injured or the glaucoma aggravated by the operation?

2. Does sympathectomy offer a prospect of sufficiently prolonged relief to justify us in urging it in these desperate cases either before or in place of iridectomy?

Naturally, the first can only be answered after collecting and analyzing a sufficient amount of clinical material, for one of the chief claims of so-called sympathectomy is that even if it does no good, it can do no harm. Cutler says: "Indeed, actual risk of life may be completely eliminated in this operation, and the disordered sensation—paresthesia, pain in the neck and face, paralysis of the trapezius, and interference with phonation—may also be avoided by a skillful surgeon, and should not weigh against the operation."

In two cases, one by Grunert of Germany and one by Wilder of this country, the operation was followed by intraocular hemorrhages, and one might infer that the vasomotor paralyses, due to division of the sympathetic, might have been the cause; but this is doubtful, as other factors were present, especially arteriosclerosis and restlessness of patient, etc. One must remember, besides, that it only occurred when an iridectomy was performed after the sympathectomy, the iridectomy being indicated by an acute glaucomatous attack supervening on the chronic process, so that all conditions were favorable to bleeding into the eye.

The author reports three or four very instructive cases where this operation has either been of decided benefit or has apparently arrested the progress of the optic atrophy, etc. One case, the second, will be briefly reviewed here:

Mr. M., aged 54 years, has chronic irritative glaucoma of left eye; incipient glaucoma of right eye since May, 1902; vision of left eye failing gradually for last 10 years. Iridectomy was performed, but notwithstanding an acute glaucomatous attack developed in the left eye, the increased ocular tension producing a marked staphylomatous protrustion of the cicatrix of the iridectomy which had been done several years before. In the right eye subtle indications of glaucoma also developed. Central vision good, but the field has suffered, and he had had frequent chromatopsia, with green and purple halos and scotomata of various sizes.

On June 16, 1902, the right superior cervical ganglion was removed by Dr. Hayward. August 23, 1904, vision of the right eye 20/20, very slight excavation, nerve head slightly pale. With the left eye fingers were counted; nerve excavated and pale; slight protrusion of scar above coloboma, which is of good size. The field of vision of right eye in 1902, after sympathectomy, was larger both for form and color, and less variable, and the faint relative visual disturbances are less marked than before operation. In

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August, 1904, the same limits of the visual field were retained. The eye has been more useful in every way than before operation, but there is still complaint of lavender and green suffusion of the visual field and of inability to see in dim light.

In a third case of simple glaucoma the ganglion was removed in March, 1904, by Dr. John Rogers. In April vision was 20/20, from 20/30 before the operation of sympathectomy, and the field 20° to 30° larger downward. In October this improvement was retained. He reads readily and goes about, whereas before operation he had only a visual slit of 3° up, 5° inward, 10° down, and 60° outwards.

The author expresses the hope that from the results he has witnessed from excision of the superior cervical sympathetic ganglion for simple glaucoma the operation will not fall into disuse.

* * *

HOMICIDE BY A BOY DURING A STATE OF SOMNAMBULISTIC AUTOMATISM. T. M. T. McKennan and W. R. Walker. *Medical News,* January 28, 1905, Vol. LXXXVI, No. 4. Recitation of a Case by Dr. McKennan.

In October, 1902, in a house at Homestead, Pa., a mother and four children were attacked and killed by blows of an axe. The deed was done at night and while they were asleep. One other child, a girl of eight years in the same room, was struck by the axe, and notwithstanding a severe wound of the skull, recovered. There was no evidence that anyone had entered the house during the night. Two brothers—James, aged 20, and Charles, aged 18—slept in a room just opposite the one where the mother and five other children slept. The father and husband was dead.

Statement made by one son, James Cauley, was that he was awakened in the night by moanings, evidently coming from his mother's room; other moanings from the children's room sounded louder than the mother's. He heard a heavy body fall, which might have been an axe. He got out of bed on the side toward the window and saw Charles come out of his mother's room with an axe in his hands. Charles did not call to him, but as he approached the bed exclaimed, "Oh! oh! Burglars! Robbers!" and struck the bed where he, James, had been lying. Again he struck at James, but James warded off the blow with a rocking-chair and grappled with Charles. Charles was shaking as if in great fear, and did not at any time appear to be in his right mind. He was led to his mother's door and saw the blood and heard the moaning. James led his brother to the police station. Charles all this time was insensible to his surroundings. After remaining in the lockup one hour and a-half, his brother saw him again, and he seemed quite rational and wanted to know why he was locked up. For several weeks he had seemed quite nervous and unable to remain in one place. He was very irritable, and would frequently change color, becoming red and pale suddenly. The grand jury returned a true bill against Charles, and he was committed to jail to await a trial for murder.

His family history showed that his father was a heavy drinker;

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that James, the elder brother, had been in the workhouse, and an older sister had a marked speech defect. The authors found that Charles was a delicate-looking youth with a marked puerile expression of countenance. He showed anatomical stigmata, especially of the ears, and in the shape of the skull, which was brachycephalic. His general development was fairly good. He conversed freely, but showed indifference to the serious and terrible accusation, and while denying all knowledge of the crime, he did not appear discontented with his incarceration. On second trial, the judge ordered the boy's release and he was sent to a hospital for mental cases.

Society Reports.

BALTIMORE CITY MEDICAL SOCIETY.

SECTION OF MEDICINE AND SURGERY.

MEETING HELD JANUARY 6, 1905.

Symposium on Immunity.—Dr. Welch opened the meeting with a brief historical *résumé* of the development of immunity. The question has always been of interest to medical men, and immunity to a second attack in the case of certain diseases has long been known. The first example of experimental immunity was variolization, which was successful, but dangerous; then followed Jenner's great triumph, marking the first era in the history of the subject. Pasteur was able to show the possibility of vaccinating (or "Jennerizing," as Behring has suggested) against several organisms, particularly against anthrax and rabies. The scientific studies of Metchnikoff, leading to the phagocystitis theory of immunity, marked the next epoch; then followed Nuttall's work on the blood sera, which resulted in the humoral theory. The discovery by Roux and Yersan of a toxin and of an antitoxin by Behring cleared up the subject of antitoxic immunity, the production of which has only a restricted application (the best examples being diphtheria and tetanus). Following the work of Pfeiffer, all the problems of bactericidal immunity were opened up, and the "anti"-bodies (precipitins, agglutinins, etc.) began to take attention.

Production of Active Immunity.—This may be effected by the injection of organisms, living or dead (Jennerization), or by the injections of specific toxins. If micro-organisms are injected, bacteriolytic immunity results; if toxins, "*giftfestigneit*" or "poison-proofness." In the latter case it must be possible to obtain soluble toxins, and as this is only possible in the case of a few organisms, notably diphtheria and tetanus, this sort of immunity cannot always be produced. Immunity may practically be produced—1. By injecting germs alive and fully virulent (only possible when the animal is not very susceptible to the given germ). 2. By injecting attenuated cultures. This involves a risk, and is not always applicable to human beings. 3. By injecting dead organisms. 4. By injecting toxins when these are obtainable. After the reaction caused by their injection the blood acquires a new (bacteriolytic or antitoxic) property, and immunity results—an immunity which may be transferred with the transfer of the serum producing *passive* immunity. The second method is used in smallpox and rabies, though the specific organism is known in neither case. In the case of rabies it seems

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probable that the organism of the fixed virus is more virulent, but less resistant than that of the virus of the streets. Statistics show a high, though not perfect, immunization possible for rabies. In animals similar immunization is possible against anthrax and (following Koch's investigations) against rinderpest, and the pecuniary results from these discoveries alone outweigh all the outlay for scientific medicine since the world began.

Trudeau, Smith, Behring, and Pierson have shown that bovine tuberculosis is more virulent than the human form, and have undertaken to immunize animals by injecting the human disease. It has been hoped that human immunization might be possible if tuberculosis from cold-blooded animals were used.

The injection of killed cultures has been attempted in typhoid, plague, cholera, and dysentery, but with only a limited success. Wright of London has made extensive experiments in typhoid, and the results have been definite, but not uniform. The three requirements for this method of immunity are (1) assurance of success; (2) absence of serious dangers; (3) the presence in the community of a danger of general exposure to the disease. In smallpox alone are these requirements met.

Agglutinins.—These result when bacterial or other cells are injected into the animal body, and they cause a clumping of these cells. They were first studied by Pfeiffer. Grueber and Grunbaum discovered the reaction in the case of typhoid fever, but Widal, who published somewhat earlier, has had his name, quite unjustly, attached to the phenomenon.

The reaction is of very great use bacteriologically in the diagnosis of organisms and clinically in the diagnosis of . It is of greatest value clinically in typhoid fever. In other diseases clinical features make the agglutination reaction superfluous, or the reaction is inconstant, or it does not occur.

Passive Immunity.—This was defined by Dr. Marshall as that type of immunity conferred by the injection of an immunized serum. The original immunity must be experienced, for natural immunity cannot be transferred. Antitoxin is a specific reaction product to the organism, which unites with the toxin somewhat as acid and base, and the materials which destroy the toxins are not the same as those which destroy the bacteria in bactericidal immunity. Practically, passive immunity is best illustrated by the case of diphtheria, where the mortality has fallen from 50 to 15 per cent. by the use of antitoxin. Doses of 2 to 14,000 units should here be used, and should be given intravenously if the case is not seen early.

Hemolysins and Precipitins.—The former, said Dr. Stokes, are substances capable of separating hemoglobins from the stroma, and their action is seen in the anemias of acute infectious diseases. Precipitins are substances formed after the injection of material into animals, capable of clothing the injected material. They are only specific for the injected substances, and Nuttall has applied the precipitin reaction to forensic medicine in attempting to distinguish the blood of different species of animals in this way.

Dr. Hemmeter referred to the early foreshadowing of Ehrlich's theory in the work of Emil Fischer, who called attention to the necessary configuration of enzymes in ferments, and used a phrase to express this fact which has since been a favorite of Ehrlich's—*"Wie ein Schlüssel in das Schloss."* The theory itself is so colossal that it is bound to meet opposition, but it is certainly a most satisfactory, if not an infallible guide.

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THE JOHNS HOPKINS HOSPITAL MEDICAL SOCIETY.

MEETING HELD DECEMBER 19, 1904.

A Case of Aortic Embolism.—Dr. Osler showed the specimen from a patient who had died with this condition. Aortic embolism was, he said, an extremely rare occurrence, being only less rare than embolus of the heart. The patient was a girl of 12 with ulcerative endocarditis. She had been ill for six weeks with a high, irregular fever, but with no embolic features, and the diagnosis had been made on the heart signs. One week before death paralysis of the legs, with sensory disturbances, appeared. The limbs became cold, but did not change in color, nor did gangrene supervene. At the autopsy emboli were found in the aorta and in spleen and kidneys.

A Case of Meningism.—This case was reported by Dr. Cole. A child, with a history of one week's illness (abdominal pain, fever, and chill of onset) had become acutely delirious after admission to the hospital. The knee-jerks were increased and Kernig's sign present. Widal reaction was positive and bacillus typhosus was cultivated from the blood. At autopsy lymphatism was extreme, thymus, general glands, and Peyer's patches being much enlarged. Meningeal symptoms without lesions and in the absence of organisms in the cerebro-spinal fluid have been called "meningism." Dr. Osler referred to the possibility of occurrence of all the symptoms of cerebro-spinal meningitis with simple acute congestion of the cerebro-spinal centers.

Puerperal-Gas Bacillus Infections.—Dr. H. M. Little reported 10 cases of infection with this organism occurring in obstetrical practice. The case of physometra reported by Dobbins in 1897 was the first of this kind to be accurately worked up. Several organisms had been reported as the cause of this condition, among them the vitriene septique of Pasteur, the bacillus phlegmoni emphysematosus of Fraenkel and Ernst, the bacillus emphysematosus vaginae, etc. Uterine infections with the bacillus aerogenes capsulatus might, according to Dr. Welch, occur as emphysema of the fetus, as puerperal emphysema, as endometritis, or as gas sepsis, the last being probably often preceded by endometritis. The bacillus aerogenes capsulatus does not normally occur in the vagina, and hence auto-infection is not possible. Of the 10 cases reported by Dr. Little, in one the organism was isolated from a breast abscess following a saline infusion, and in the other nine from the uterus. Infection of the organs through a typhoid ulcer seemed probable in one case. The organism occurred alone in only two cases, and its association with others made it apparently a more serious infection.

Arteriovenous Aneurism.—Dr. Osler reported a case who had developed this condition immediately after a pistol-shot wound of the thigh. The tremor, which reached from ankle to thigh, was accompanied by a vibratory thrill and a continuous humming-top murmur accentuated at systole. Dr. MacCallum briefly reviewed the subject of arteriovenous aneurism. The classification of Orth was said to be the best, the condition being divided into (1) arteriovenous aneurisms (aneurisms which have later broken into a vein); (2) varix aneurismatica (varicose vein connecting with an ar-

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tery), and (3) aneurism varicosa (hematoma followed by later connection with the vessels). The cause is usually an injury, particularly a stab or revolver wound. Complete rupture of the artery with simultaneous wound of the vein may take place and the condition prove fatal before a sac can form, or bruising of the walls of artery and vein with later union may occur and few symptoms follow, or there might be a small wound of each vessel with extravasation. Distension of veins and arteries and chronic passive congestion result. Operative treatment has not proven satisfactory. Dr. Osler referred to a patient who had developed an axillary arteriovenous aneurism and is now, years later, living an active life. He had seen another case of arteriovenous aneurism involving the subclavian vessels. Dr. Bloodgood said that the treatment for these cases was suture, and not ligation.

Ovariotomy at the Extremes of Life.—This subject was reviewed by Mr. Wial. Dr. Kelly had, he said, removed the ovary in 115 patients over 70 years of age, and he felt that the age of the patient was no contraindication to the procedure. As to the character of ovarian tumors, dermoids were more frequent in children and rarer in the old, while the reverse was true of multilocular cysts. There were only three cases of carcinoma in the literature under 10 years of age.

The patient had come to the dispensary complaining of a vaginal discharge. The girl was five years old. The family and previous history were negative except for a fall at one year. On examination there was an offensive discharge, the genitals were red and excoriated, the breasts somewhat large, and a tumor was felt which under ether proved to be a movable, circumscribed tumor of the left ovary. At operation the other ovary was found normal, and there were no glands. The tumor, which was removed, proved to be a cystic adenocarcinoma. Dr. Kelly said that too little emphasis had been laid on gynecology in children. They were, he said, particularly easy to examine, and the vagina could be more satisfactorily explored by examination through a vesical speculum than with the finger.

Book Reviews.

DIET IN HEALTH AND DISEASE. By Julius Friedenwald, M.D., Clinical Professor of Diseases of the Stomach in the College of Physicians and Surgeons, Baltimore, and John Ruhräh, M.D., Clinical Professor of Diseases of Children in the College of Physicians and Surgeons, Baltimore. Octavo volume of 689 pages. Cloth, $4 net. Philadelphia, New York, and London: W. B. Saunders & Co. 1904.

Friedenwald's and Ruhräh's work on diet in health and disease has recently appeared, and has been the subject of much favorable comment by members of the profession into whose hands it has fallen. The book is mainly designed for the use of the student and the general practitioner, and is eminently practical. The question of the chemistry and physiology of digestion is first considered briefly—far too briefly for the chemist and physiologist to find the work of value, but of sufficient length and lucidity

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to be of real help to the average clinician, and causing him to appreciate the general principles of the subject. This is followed by a discussion of the various classes of foods, beverages and stimulants, and the bearing of various factors upon diet. Next follow methods of feeding in infancy, in old age, during pregnancy and the puerperium, and special methods of feeding.

The larger portion of the work is devoted to a consideration of the best form of diet in the various diseases. Towards the end of the book are given in detail dietaries of various public institutions, army and navy rations, and the chemical composition of American foodstuffs, this last being obtained from the compilations of analyses made by Atwater and Bryant of the United States Department of Agriculture.

The book will undoubtedly prove of real practical value to the student and general practitioner, and should stimulate a desire among the rank and file of the profession for a greater and more complete knowledge of this much-neglected subject of dietetics. B.

A Textbook of Clinical Diagnosis by Laboratory Methods. For the Use of Students, Practitioners, and Laboratory Workers. By L. Napoleon Boston, A.M., M.D., Associate in Medicine and Director of the Clinical Laboratories of the Medico-Chirurgical College, Philadelphia; formerly Bacteriologist at the Philadelphia Hospital and at the Ayer Clinical Laboratory of the Pennsylvania Hospital. Octavo volume of 547 pages, with 320 illustrations, many of them in colors. Cloth, $4 net; sheep or half-morocco, $5 net. Philadelphia, New York, and London: W. B. Saunders & Co. 1904.

L. Napoleon Boston in his "Textbook of Clinical Diagnosis by Laboratory Methods" differs very little in his treatment of the subject from many other textbooks on the same subject. The subject, however, is brought thoroughly up to date, and the subjects of serum diagnosis, the newer methods of the estimation of sugar, Bence-Jones albumen, uric acid, and purin have been carefully considered. More space than usual has been given to the consideration of animal parasites, diseases of the skin, transudates and exudates, and secretions of the eye and ear. In the first of these, animal parasites, Dr. Stiles of the Bureau of Animal Industry has offered many suggestions, and the illustrations of the parasites met with in the urine and in the feces are among the best that we have seen in any book of this kind. The book should prove a useful laboratory guide. B.

Diseases of the Liver, Gall-Bladder, and Bile Ducts. By H. D. Rolleston, A.M., M.D. (Cantab.), F.R.C.P., Physician to St. George's Hospital, London; formerly Examiner in Medicine at the University of Durham, England. Octavo volume of 794 pages, fully illustrated, including seven colored insert plates. Cloth, $6 net. Philadelphia, New York, and London: W. B. Saunders & Co. 1904.

Rolleston's book on the "Diseases of the Liver, Gall-Bladder, and Bile Ducts" is a very satisfactory and complete consideration of the question, in which the whole subject is gone over thoroughly and with the authority

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which the reputation of the author gives to it. The literature of the subject has been given especial attention, and the book will prove of peculiar value to those doing research work on the diseases of the liver, either from the pathological, clinical, or surgical point of view, from the wealth and completeness of this bibliography. As one would expect from the English writer and teacher, much attention has been paid to the subject of gross pathology, without a grasp of which, as the author states in the preface, "it is impossible to make a rational diagnosis, to treat the clinical manifestations in a satisfactory manner, or to give a reliable prognosis." Some of the diseases to which especial attention has been paid of recent years—for example, hepatoptosis and hemachromatosis—have been treated in an especially complete manner.

The book is a large volume of 800 pages, well printed, and well, though not profusely, illustrated. About three-quarters of the text are taken up with consideration of diseases of the liver; the remaining quarter with those of the gall-bladder and bile ducts.

This book, as well as Quincke's and Hoppe-Seyler's masterly consideration of the same subject in Nothnagel's series, should exert a marked effect upon the profession at large in calling attention to the extreme importance of a greater knowledge of the diseases of liver, gall-bladder, and bile ducts—a knowledge which could not prove amiss in the mental armamentarium of practically all clinicians, with the exception of those few who have made an especial study of diseases in this field. B.

A Textbook of Human Histology, Including Microscopic Technic. By Drs. A. A. Böhm and M. von Davidoff of Munich, and G. Carl Huber, M.D., Professor of Histology and Embryology in the University of Michigan, Ann Arbor. Second edition, thoroughly revised and enlarged. Handsome octavo of 525 pages, with 376 original illustrations. Flexible cloth, $3.50 net. Philadelphia, New York, London: W. B. Saunders & Co. 1904.

The appearance of the second edition of this book in such a comparatively short time is proof of the favorable reception accorded to the first American edition of this standard German work. In our review of the first edition we noted the high standard and completeness of the text as well as the excellency of the illustrations. The second edition has been reset and many of the newer methods of technic incorporated. Many of the chapters, especially those dealing with general histology, have been subjected to extensive revision. The illustrations have been increased from 351 to 377. The first 55 pages are devoted to a study of microscopic technic, the next 130 pages to the study of the cell and the tissues, and the remainder of the book to special histology. The book is bound in flexible cloth, which makes it more readily handled in the laboratory. We know of no work on the subject which will give greater satisfaction to the student.

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MARYLAND MEDICAL JOURNAL.

JOHN S. FULTON, M.D., *Editor.*

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THOMAS R. BROWN, M.D. | HUGH H. YOUNG, M.D.
ROBERT REULING, M.D. | JOSE L. HIRSH, M.D.

BALTIMORE, MARCH, 1905

WHAT PASSES MY PERSIMMON.

IT beats my persimmon to understand how a good man—a lovable and in many respects a righteous man—can live in Baltimore for 16 years and, after so long schooling, mishandle the vernacular of those who love him. That a man of taste, a master workman in letters, should disfigure a cherished colloquialism by introducing an extra sibillation and an alliterative blemish; this beats my persimmon. In the precincts of a university and before a throng of cultured Marylanders—persimmon!—it tops my koko how Dr. Osler can be so irreverent.

The newspaper men were amazed. One of them reports Dr. Osler to have said, "It passes my comprehension." Comprehension is better, or, at least, in this connection, more ladylike than persimmon. At all events, rather than have the treasured idiom alembicated, it is better to sacrifice persimmon and let the tail go with the hide. Wouldn't that have jarred Clifford Allbutt?

The problem that passes Dr. Osler's persimmon was stated in his stirring address at McCoy Hall on Washington's Birthday, and concerns the metabolism of university life. Infantilism and progeria, he says, are the dreadful results of an intellectual dietary too well regulated, and but few colleges are without instances of these afflictions either in the faculty or among the students. From these maladies a man may deliver himself by "a feline restlessness of mind and body." "It passes my persimmon," he says, "how good men—even lovable and in other respects righteous men—can stay in one place for 25 years." "Hey! for boot and horse, lad, and round the world away; young blood must have its course, lad, and every dog his day"—and his philosophies. Evade—erump—skip—flit—intellectual promiscuity is good for your persimmon.

This antisocial propaganda is no gospel for the youth of Athens, nor for her reverend sages. Osler himself remarks upon the evils that beset the seventh and eighth decades. His peripatetic philosophy is but the apology of a cornered Lothario, an argument of Hyperides, to be admitted once and to be excluded ever after. Let us beseech the prophet that he may depart, for he teacheth that which is not lawful for us to believe or to observe, being Romans. Of course, the prodigal will return, even as we desire, and this is the huckleberry that beats my persimmon.

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FIRST ANNUAL REPORT OF THE HENRY PHIPPS INSTITUTE.

THE first annual report of the Henry Phipps Institute for the Study, Prevention, and Treatment of Tuberculosis is an interesting volume of 254 pages. The report proper takes up the first 118 pages. Dr. Lawrence Flick, the director, describes the transformation of an old house, 238 Pine street, into a serviceable hospital and dispensary for tuberculosis. In the last 11 months of 1903, 2039 patients were treated. The Institute was overrun with patients from the first, and although the medical staff was increased during the year to 16 physicians, the press of work did not permit the study of individual cases with such care as the purposes of the Institute require. The cases are, however, tabulated by Dr. Flick according to nativity, age, sex, residence, social condition, occupation, habits, predisposing diseases, source of infection, and with reference to signs, symptoms, tissues involved, and complications. The results of treatment are recorded rather briefly. No "arrests" or "cures" are reported, as one would expect in a work of such brief duration.

Five hundred and thirty-seven cases are recorded as having improved under treatment, 583 were not improved, 153 died, and in 884 cases the results are unknown. Those said to have improved are the patients showing "amelioration of symptoms, with increase in weight and gain in physical health—one or both." Some of these patients improved so far as to resume their occupations. This part of the summary is difficult to understand. The number of persons reported on is 2157. The whole number said to have been registered for treatment was 2039, and of them 360 did not have tuberculosis, 214 were able to pay for treatment, and therefore were not accepted, seven had no diagnosis recorded, leaving 1458 to furnish the year's experience in the treatment of tuberculosis.

The results of treatment as indicated by gain in body weight are interesting. Of 506 dispensary patients, the average increase in weight was 62 pounds, the maximum gain being 39 pounds. The average loss in 316 dispensary patients was 4.4 pounds, the maximum loss being 30 pounds. The average gain in weight among 57 hospital patients was 8.3 pounds, the maximum gain being 33.5 pounds. The average loss of 27 hospital patients was 5.9 pounds, the maximum loss being 25 pounds.

The records of 55 autopsies are well summarized by Dr. Joseph Walsh. Dr. George B. Wood reports on 177 cases of laryngeal tuberculosis. The neurological work of the year is very carefully summarized by Dr. D. J. McCarthy, though the number of cases reported upon is not stated. The arrangement of this chapter promises much for the interest of future reports. Dr. Mazyck P. Ravenel contributes a good study of a case of fibroid phthisis with marked bronchiectasis.

A statistical study of tuberculosis in Philadelphia from 1861 to 1903 concludes the report. The excellent lectures delivered under the auspices of the Phipps Institute make up the remainder of the volume. These are by Dr. Edward L. Trudeau, Dr. William Osler, Dr. G. Sims Woodhead, Dr. Hermann M. Biggs, and Dr. Edwards Maragliano.

The first year's work of the Phipps Institute must have afforded great satisfaction to its founder, and future reports will be awaited with increas-

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ing interest by students of tuberculosis. Dr. Flick is doubtless quite right in pointing out as the chief merits of this year's work, the development of a good medical staff, and the demonstration that tuberculosis-nursing offers a safe and agreeable occupation for cured patients.

THE SOCIETY FOR SANITARY AND MORAL PROPHYLAXIS.

ON February 9, 1905, a new association was formed in New York city. When the advent of a new babe extends the family circle beyond the reasonable efficiency of paternal means, the note of rejoicing is often somewhat forced. There is room, however, for this infant. Its right to be born was unquestionable, and it has been well born. The purpose of this society is to start a movement for the prevention of syphilis and gonorrhea. Of all the problems of preventive medicine, this is most difficult. Professional sanitarians avoid it. No administrative method so far proposed or tried offers the slightest favorable prospect. These diseases have not even received official recognition as menaces to public safety. The Conference of State and Provincial Boards of Health has, indeed, approved two circulars for distribution by State boards of health among physicians. One of these circulars is intended to elicit from physicians information as to the prevalence of these diseases; the other instructs persons already infected how to avoid communicating their infection to others. The State boards have not taken up this method of prophylaxis with any apparent enthusiasm, and it is difficult, indeed, to see how any good can come of it.

In his address to the new society on February 9 Dr. Prince A. Morrow outlines what he believes to be a practical plan of campaign against these diseases. It seems to us that he comes very near the heart of the matter when he points out an essential distinction between the venereal diseases and other infections, in the fact that their communicative mode is willful. The element of volition in the mode of transmission would seem to indicate that prophylaxis might best be undertaken by popular education. The prevailing ignorance about venereal diseases is most profound. It is also a more refractory ignorance than any other concerning infectious diseases. "It would appear," says Dr. Morrow, "that the aim of parents and instructors is to give the young, when launched into the world, a brevet of ignorance in all matters pertaining to sex and sexual hygiene." This attitude, so often described as purely sentimental, is more truly characterized as an ignorant attitude—invincibly ignorant, up to the present time, resting upon no basis of real modesty, but upon a pharisaic and often hypocritical indifference to the profound significance of these infections.

To conceal the scars of immorality, great and small, is the most studious care of all its victims, and this secretiveness goes to the extreme of keeping the young in that state of ignorance which is the most efficient cause of sexual misadventure. The campaign of education which Dr. Morrow plans begins with the rising generation, and we are justified in employing the influence of wholesome fear, which, after all, he says, "is the protective genius of the human body."

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Summary of Results of Examination Held by the Board of Medical Examiners of Maryland, December 14, 15, 16 and 17, 1904.

No.	College of Graduation.	Anatomy	Surgery	Pathology	Obstetrics	Practice	Chemistry	Materia Medica	Therapeutics	Physiology	Total	Average
* 1	Maryland Medical College, '04	75	65	45	75	81	70	89	80	75	655	72⅞
† 2	University of South, '03	75	..	..	..	..	40	..	..	..	..	..
* 3	Baltimore Medical College, '03	45	30	15	65	57	5	54	44	75	392	43⅝
† 4	University of Maryland, '04	75	..	..	..	..	80	..	78	..	..	..
† 5	Baltimore University, '02	53	..	60	..	..	10	..	..	..	..	..
† 6	Baltimore University, '03	..	..	20	..	..	..	..	..	83	..	..
† 7	Maryland Medical College, '03	80	..	..	..	..	60	..	..	80	..	..
* 8	College of Physicians and Surgeons, '03	93	98	95	90	88	80	92	98	88	802	89⅛
† 9	University of Maryland, '04	76	..	55	..	..	30	..	..	..	..	..
†10	Maryland Medical College, '04	75	..	50	..	78	45	..	..	..	..	..
†11	University of Maryland, '04	44	..	65	..	..	40	..	..	..	..	..
*12	Maryland Medical College, '04	83	80	50	90	56	20	78	73	75	605	67⅞
*13	Johns Hopkins Medical Department, '04	99	95	95	100	86	90	93	94	100	852	94⅝
*14	Columbian University, '04	63	85	75	100	84	45	72	78	83	675	75
†15	College of Physicians and Surgeons, '04	..	..	75	..	89	30	..	..	..	..	..
*16	Maryland Medical College, '04	75	75	25	75	70	10	67	46	60	503	55⅞
*17	Columbian University, '04	80	98	70	85	81	60	75	88	75	712	79⅛
†18	University of Maryland, '04	42	..	40	..	..	60	..	..	..	..	..
†19	University of Maryland, '04	31	..	55	..	75	60	..	..	..	..	..
†20	Baltimore University, '03	42	40	20	..	58	55	82	75	75	..	..
†21	Illinois Medical College, '02	85	..	50	..	86	40	..	80	..	..	..
†22	Baltimore University, '03	40	..	..	..	62	..	..	..	75	..	..
†23	Baltimore Medical College, '02	75	80	..	..	78	75	..	77	..	..	..
*24	College of Physicians and Surgeons, '04	87	90	75	85	88	40	78	69	78	690	76⅝
†25	Maryland Medical College, '04	75	..	50	..	..	60	..	..	..	..	..
†26	College of Physicians and Surgeons, '04	..	..	20	..	..	20	..	..	..	..	..
†27	Maryland Medical College, '03	76	..	70	..	..	50	..	..	..	..	..
*28	University of Maryland, '04	68	45	55	85	78	10	55	75	75	546	60⅝
*29	Johns Hopkins Medical Department, '01	88	90	90	90	83	75	75	80	78	749	83⅛
*30	Columbian University, '03	81	90	65	85	77	40	75	78	84	675	75
†31	University of Maryland, '03	..	80	75	..	78	..	..	..	..	..	..
†32	Baltimore Madical College, '04	..	80	35	..	80	50	..	..	..	..	..
†33	Baltimore University, '04	..	..	55	75	..	50	..	83	..	..	..
†34	Baltimore Medical College, '04	76	..	50	..	82	45	..	..	..	..	..
†35	Maryland Medical College, '04	84	..	50	85	..	55	..	..	..	..	..
*36	Howard University, '03	75	66	40	80	59	50	86	88	75	619	68⅞
†37	Baltimore University, '03	..	..	30	..	..	50	..	..	85	..	..
†38	Baltimore Medical College, '04	44	50	30	..	..	55	..	..	..	..	..
†39	Columbian University, '04	75	..	70	..	..	35	..	..	..	..	..
†40	College of Physicians and Surgeons, '02	..	..	35	..	75	45	..	..	..	..	..
†41	University of Maryland, '02	..	..	..	90	..	..	..	..	..	..	..
†42	Maryland Medical College, '01	56	..	0	..	..	..	..	..	..	..	..
*43	University of Maryland, '04	75	90	75	100	75	70	66	89	80	711	79

Of the 43 applicants in the above list, there are 14 who participated in the examination for the first time, of whom 8 were successful. There were 29 applying for reexamination in branches in which they had previously failed, of whom 4 were successful in working off all branches. Primary examinations require a general average of 75. Those reexamined are required to make 75 in each branch.

Primary examinations are marked *.
Reexaminations are marked †.

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Report of Board of Medical Examiners of Maryland

QUESTIONS USED AT THE EXAMNATIONS OF THE MARYLAND STATE EXAMINING BOARD ON DECEMBER 14, 15, 16 AND 17, 1904

THERAPEUTICS.

1. Name four drugs classed as disinfectants.
2. Define the term antispasmodic, and name five drugs belonging to this class.
3. What are the therapeutic uses of the ammonium preparations?
4. Therapeutic uses of the bromides.
5. Write a prescription containing three drugs, using Latin terms without abbreviations, suitable for administration in a case of acute follicular tonsilitis.
6. Explain how diphtheria antitoxin causes immunity and effects cure, and the methods of administration as a prophylactic and as a curative agent.

MATERIA MEDICA.

1. What is the composition of Blaud's pills?
2. Give officinal name, formula and dose of Lugal's solution.
3. What is the officinal name and composition of Fowler's solution? Give dose and antidotes.
4. Describe the symptoms of carbolic-acid poisoning, and its treatment.
5. Give the physiological action of nitroglycerin.
6. Podophyllum, source, preparations, dose and physiological action.

ANATOMY.

1. (a) What variety of epithelium covers the mucous membrane of the mouth? (b) Of the nose?
2. What nerves supply the teeth and from what cranial nerves are they derived?
3. (a) What veins return the blood from the digestive apparatus? (b) Where do these veins empty?
4. (a) Bound Hunter's canal. (b) What passes through it?
5. Name bones entering into the formation of the orbits.
6. What anatomical structures are severed by a circular amputation at the middle of the thigh?

SURGERY.

1. In the usual muscle-splitting operation for appendicitis, what structures would be cut and how would you identify each?
2. What surgical landmarks of the elbow joint would aid you by their position in diagnosing between a fracture of the upper end of the radius and a posterior dislocation of the ulna?
3. Describe what is commonly called housemaid's knee and its treatment.
4. What is an embolus, and how does is differ from a thrombus? What relation does it bear to an infarct?
5. Describe one of the operations for the radical cure of inguinal hernia.
6. Describe an operation for the removal of the kidney.

CHEMISTRY.

[Applicant is required to answer but one of the two questions included under this number, and must not answer both.]

1. Define atom, molecular weight, nascent, quantivalence, and analysis.

Or,

Define molecule, atomic weight, alltropic, specific gravity, and synthesis.

[Applicant is required to answer but one of the two questions included under this number, and must not answer both.]

2. Describe in detail a chemico-microscopic method for the identification of blood stains on cotton, wool, or other fabrics.

Or,

Describe in detail Marsh's test for arsenic.

3. Describe the qualitative and quantitative determination of hydrochloric acid in a specimen of gastric contents.
4. About what percentage of fats, proteids and sugar should the following milk formula yield: Gravity cream, 5 ounces; skimmed milk, 5 ounces; sugar of milk, 1 ounce; water, a sufficient quantity to make 20 ounces?
5. Describe in detail two reliable methods of detecting the presence of albumen in urine, and one clinical method for its quantitative estimation.
6. Mention chemical antidotes for phosphor-

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ous poisoning, with explanations of the action of each.

PATHOLOGY.

[Applicant is required to answer but one of the two questions included under this number, and must not answer both.]

1. Define the following bacteriological terms: Strict parasite, facultative anerobe, spore, flagellum, and mycelium.

Or,

Describe and give the reasons for the employment of what is known as fractional sterilization.

2. Describe in detail a bacteriological procedure by which you could determine the fecal contamination of a water supply.

3. Mention five general or systemic diseases caused by micro-organisms, and in connection with each disease give the name of and the chief morphological characteristics of the organisms concerned.

[Applicant is required to answer but one of the two questions included under this number, and must not answer both.]

4. Describe "termination of inflammation by resolution."

Or,

Give your idea of the processes concerned in the formation of an abscess, say, a stitch abscess.

5. (a) Myomata—definition and histological description of. (b) What determines the benign or malignant nature of a new growth?

6. Describe the spleen and kidneys from an individual dead after a long-standing mitral insufficiency.

OBSTETRICS.

1. Give two of the causes of, and treatment for, hemorrhage from the non-pregnant uterus.

2. Describe the fertilization of the ovum.

3. Describe a normal labor, vertex presenting anteriorly and to the left.

4. Give method of management of shoulder presentation, head lying to the left, vertex anteriorly.

5. Describe the treatment of inflammation of the mammary gland during lactation.

6. What do you consider the best substitute for mothers' milk, and how should it be modified for and administered to the infant?

PRACTICE.

1. Define icterus, psoriasis, rickets, pyonephrosis, cholelithiasis.

2. Differential diagnosis between follicular tonsilitis and tonsilar diphtheria. Between catarrhal bronchitis and lobar pneumonia.

3. Etiology, clinical history and treatment of cholera morbus.

4. Define Argyl-Robinson pupil, and name disease in which it is one of the diagnostic symptom.

Name some diseases in which purpura is a frequent symptom.

5. Give cause and diagnosis of ulcer of the stomach.

6. Differential diagnosis between variola and varicella.

PHYSIOLOGY.

1. What are the two bile acids, and where are they formed?

2. State the average specific gravity of urine and its reaction. Give also the difference between urea and uric acid, and give about the daily excretion of each.

3. What is the difference between the first and second sound of the heart? Explain the rhythmic heart-beat.

4. Describe rigor mortis, and state whether confined to voluntary muscles.

5. What is glycogen? Give the formula, state where found, and how the quantity may be increased or lessened.

6. What is meant by tidal, complemental, reserve and residual air? What is meant by "the vital capacity?" Give the difference between inspired and expired air.

Medical Items.

THE State still remains free from smallpox, no case having occurred since July, 1904.

THROUGH the activity of the Reading (Pa.) Medical Society a new tuberculosis sanitarium is to be erected near Reading.

THE smallpox scare at Gettysburg College was put to rest by the discovery that the case which caused the alarm was one of chicken-pox. The fear invaded Maryland, for one or two students escaped and returned to their homes in Maryland.

THE Maryland Association for the Prevention and Relief of Tuberculosis has begun its campaign of education by means of lectures to

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small audiences in various parts of the city. As rapidly as possible operations will be extended to other parts of Maryland.

THE *Medical Library and Historical Journal* is in the same predicament which confronted the MARYLAND MEDICAL JOURNAL a year ago. The current number is lost by fire, the printing establishment being totally destroyed.

THE *Georgia Practician* is a new arrival in the family of American medical journals. One is at once struck by its name, which will jar some of us as we need to be jarred. The significant M.D. does not appear after any man's name. Good again, though unusual. The editorials are first-rate. Here's success to the *Practician.*

THE Book and Journal Club of the Medical and Chirurgical Faculty held an interesting meeting on February 15. The guest of the evening was Dr. W. W. Keen of Philadelphia. Dr. Wm. H. Welch spoke on the medical literature of the Civil War. After the meeting a reception was given in the faculty rooms to Dr. Keen and Dr. Osler.

THE one hundred and seventh annual meeting of the Medical and Chirurgical Faculty of Maryland will be held in Baltimore on April 25, 26 and 27, 1905. All those members who desire to present papers should communicate with Dr. Jeffries Buck, chairman of the program committee, before March 15. The annual oration will be delivered by Dr. Wm. Osler.

PRELIMINARY examinations for appointment of assistant surgeons in the United States army will be held on May 1 and August 1, 1905, at points to be hereafter designated. Full information and permission to appear for examination may be obtained from the Surgeon-General, United States army, Washington, D. C. Applicants must be citizens of the United States and between 22 and 30 years of age, graduated from a medical school legally qualified to confer the degree of doctor of medicine, must give evidence of good character and habits, and must have had at least one year's hospital training or its equivalent in practice. In order to perfect necessary arrangements for the examinations on May 1, applications must be complete and in the possession of the Surgean-General by April 1, and for the examinations on August 1 by July 1. There are at present 20 vacancies in the medical corps of the army.

ON February 21 the new tuberculosis dispensary at Johns Hopkins Hospital was opened with appropriate exercises. Dr. Henry Barton Jacobs, president of the Laennec Society, made an address on the "Origin and Rise of Tuberculosis Dispensaries." Dr. Herman M. Riggs, medical director of the New York City Health Department, made an address on "The Advantages of a Tuberculosis Dispensary." Dr. Wm. Osler spoke on "Tuberculosis in the General Hospitals," offering the restriction which excludes consumptives from general hospitals. Dr. Wm. H. Welch also spoke. Mr. Henry Phipps of Pittsburg, through whose generosity the dispensary was built, was present and responded happily to the demand upon him for a speech. He deprecated the use of his name as a designation for the dispensary. After March 1 the regular clinical work of the dispensary will begin. Dr. Louis V. Hamman being in charge.

DR. DARLINGTON, health commissioner of New York city, is reported to have asked for an appropriation for the purpose of taking a census of New York. He believes that the census of 1900 underestimated the population, particularly of the more crowded sections, and this enumeration used as a basis for present estimates gives too low populations, which, in their turn, give too high death-rates. New York ought to take a census in 1905 for the sake of knowing her population. Ten-year intervals are too long for census enumerations. But the reasons offered by Dr. Darlington afford no argument whatever for taking a census at this time. The death-rate of New York is not too high, though by increasing the population it could be made to appear much lower. The death-rate of New York for 1904 is quite consistent with the experience of past years, and is as nearly true in all probability as any death-rate ever published by that city.

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MARYLAND
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INTUBATION EXPERIENCES.

By Wm. T. Watson, M.D.

READ BEFORE THE SECTION ON LARYNGOLOGY AND RHINOLOGY, MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND, FEBRUARY 24, 1905.

THE first of my patients to be intubated was operated upon by Dr. W. D. Booker October 9, 1894. The tube was removed on the fourth day. The child breathed well for an hour or so and then rapidly closed up. By the time I secured Dr. Booker—some five hours after the tube's removal—the child was fighting hard for breath.

Ten months later Dr. J. W. Chambers was called by me in the morning to intubate a two-year-old child, but was unable to operate before 5 P. M. The physician and parents had several anxious hours, and the child's life was greatly imperiled.

These experiences determined me to do my own intubating. I read up on intubation, and resolved to get a set of instruments.

On October 1, 1895, I was called to a case of laryngeal stenosis in an infant of 10 months. It had been treated by a physician for pneumonia. A neighbor, seeing the resemblance of symptoms to those in a case in her own house, diagnosed it as "chronic croup." The physician accepted her diagnosis and also her suggestion to send for me, as she thought I knew how to intubate.

I tried to get someone to intubate, but without success. Dr. Chambers was occupied, but kindly offered to lend me his set of instruments and encouraged me to try to use them. I, however, procured a set for myself, and succeeded very well. I passed the tube into the esophagus two or three times, and finally landed it in the larnyx. A large quantity of mucus was coughed up. Much to my dismay, the tube became obstructed and I had to remove it and intubate again. Dyspnea was relieved, but the child died 15 hours later. Antitoxin was not administered until three hours before death. I had advised its use at the time of intubation.

This was the beginning of the most satisfactory work I have done in my professional career. Provided it is within a reasonable radius from home, I hail with delight every call for laryngeal diphtheria. At a distance these cases are exceedingly troublesome.

In the past nine years I have intubated 109 children, or an average of one a month—just about enough to keep me in practice.

Antitoxin came into use in the spring of 1895—just 10 years

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ago—so that all my intubations have been performed in the antitoxin era.

ANTITOXIN CASES.

One hundred of my cases received antitoxin. In most of the cases the diagnosis of diphtheria was confirmed by culture, by membrane in the nose or throat or which came up during operation, or by the presence of the disease in other members of the household.

Of these 100 cases 78 recovered and 22 died.

Of the 22 fatal cases 13 were almost beyond hope when I saw them.

On several occasions I have been called to operate, but found the children dead upon my arrival. In several other cases I arrived just in time to get them into my statistics, but too late to be of any service save to make easier the mode of death. The neglect has sometimes been on the part of the parent, but more often upon that of the physician.

Eighty-one of these cases occurred in the practice of other physicians, and I had but little control of the time of intubation or of the amount or time of administration of the antitoxin.

Of these 81 cases 19 died, or a mortality of 23.5 per cent.

Nineteen of these cases were in my own practice. There were three deaths, or a mortality of 15.8 per cent.

These percentages compare very favorably with those reported by other operators.

In the pre-antitoxin days these figures would have been reversed —about 22 per cent. of recoveries and 78 per cent. of deaths.

The mortality was greatly influenced by the age of the patients. But one-fourth of my cases were under the age of two years. Yet 60 per cent. of the deaths occurred in this fourth. The younger the patients the less able are they to battle for breath and to withstand the diphtheria poison.

NON-SERUM CASES.

In the nine cases receiving no antitoxin the stenosis was due to the following causes:

One to measles (recovered).

Two to catarrhal laryngitis (recovered).

Three to diphtheria (two died).

One to papilloma of larynx (recovered).

One to a post-diphtheritic contraction (temporarily in my care).

One to tuberculous lymph glands.

Of the three diphtheritic cases, one died a few minutes after intubation and before antitoxin could be administered. One died three and one-half days after operation. I advised the use of antitoxin, but, because the only culture made was negative, the attending physician would not use it.

The third case got well without antitoxin. It was in the early days of the serum, and the child's physician did not then believe in it.

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AGES.

The ages of my patients have ranged from six months to 12 years.

In my six-months' case the larynx was normal and there was no difficulty in introducing the one-year tube. The infant had dyspnea, which was so great that for several days it could not nurse. It made a whistling sound with each respiration. Intubation afforded no relief. We suspected pressure from tuberculous glands, as there were several enlarged glands in the neck. The dyspnea gradually subsided. Six months later, when the child was a year old, it died of tuberculosis of the lungs and pleura, and the offending glands were located at the bifurcation of the trachea. They were the seat of an old tuberculous process.

In my 12-year-old case the tube appropriate to the age could not be introduced without force, so I used the eight-nine-year size. It was retained in spite of hard coughing. At the end of three days it was coughed up and the child was well.

SOME DIFFICULTIES ENCOUNTERED IN INTUBATION.

In theory intubation is as easy as dropping a nickel in a slot. An aunt of one of my patients had this idea, for a niece having coughed up her tube, the aunt was on the point of trying to replace it when I arrived. She said: "It's just like putting a shuttle in a sewing machine and makes the same noise."

In practice it is often beset with difficulties, and I know of two instances in which the patient died during the physician's first attempt to intubate.

Improper Position.—One important source of trouble is improper position of the child, due to inefficient assistants.

Having the child properly held is essential to rapid and careful intubation. On two occasions in my experience the child was held by a drunken man. One of these men committed suicide a few days later while suffering with alcoholic mania. He really did better than some more sober but more nervous people, and took great pride in following the "perfesser's" instructions to the letter. The other fumbled and delayed the operation, which was, however, finally successful. I nearly lost one case because the mother who was holding the child fainted as I was operating.

Spasm of Larynx.—Spasm of the larynx proved to be a serious complication in one case. The moment my finger touched the larynx there was a complete apnea with intense cyanosis. The spasm relaxed very slowly. I tried repeatedly to intubate, but found the larynx tightly closed. I finally desisted and called in Professor Chambers, who encountered the same difficulty. He finally used more force than I dared to use, and the tube went into place.

Some degree of spasm of the larynx is frequently encountered during intubation, but it usually relaxes in a few moments.

Tube Too Large.—On several occasions I could not insert without force the tube called for by the age, but the next size smaller proved to be the proper one.

Vomiting of Food.—Vomiting of food is not apt to occur

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during the first intubation, for, as a rule, the child suffering from dyspnea has taken very little food.

In a succeeding intubation it may be a source of danger. In a recent case dyspnea returned quickly after extubation. The child had just taken a bottle of milk, and I could insert the tube only after several vomiting attacks, caused by my fingers, had emptied the stomach.

In another case the baby coughed up the tube just after nursing eight ounces of milk. Necessity for reintubation was most urgent. Attempts to intubate caused vomiting. By the time the vomiting ceased the baby was almost asphyxiated. I did artificial respiration, and in one-half hour the patient was breathing normally.

Struggles of Patient.—In some cases, especially in a second or later intubation, the child knowing what is coming and being in a more vigorous condition, will clinch the jaws until almost asphyxiated. In one case I was unable to operate until the child ceased to breathe. Artificial respiration was done, and the child in an hour was as well as ever.

Effects of Anesthesia.—One intubation under anesthesia proved to be puzzling. The child had been wearing a tracheal canula, the larynx being in a peculiar contracted condition following diphtheria. Dr. Blake, whose case it was, introduced the tube under anesthesia, but found there was complete apnea. Later on, while Dr. Blake was absent from the city, I had the same experience. We supposed that the lower end of the tube must be occluded by granulation tissue caused by the wearing of the canula. On a later occasion I had the same experience, but before removing the tube I made a digital examination of the larynx and found the epiglottis tightly applied to the top of the tube. I pulled the epiglottis forward, and respiration went on in a normal manner. I held up the epiglottis until the child awakened from the anesthetic, when she was able to breathe and swallow all right. Whether this would frequently occur under anesthesia I am unable to say, but it is an experience worth keeping in mind.

Pushing Down Loose Membrane.—Every now and then, after a tube is in position, the respiration is worse than before. If the tube is removed by means of the thread the offending membrane is pretty sure to follow. The membrane is more loosely attached in the larynx and trachea than in the nose and throat, and is readily detached. The specimens which I show—three casts of the trachea, and one of trachea, bronchi and bronchioles—were brought up in this way.

In my last case, February 5, 1905, after intubation the child breathed very well for 20 minutes. I then removed the thread. As I was preparing to leave, the child began to cough, when expiration became suddenly arrested with a clicking noise. This meant loose membrane. I immediately extubated, and the tube was followed by a cast of the trachea.

Abnormality of Larynx.—In December last I encountered a peculiar and difficult case in a girl of three years. I tried a tube for a three-year child, then a two-year tube, and finally a one-year

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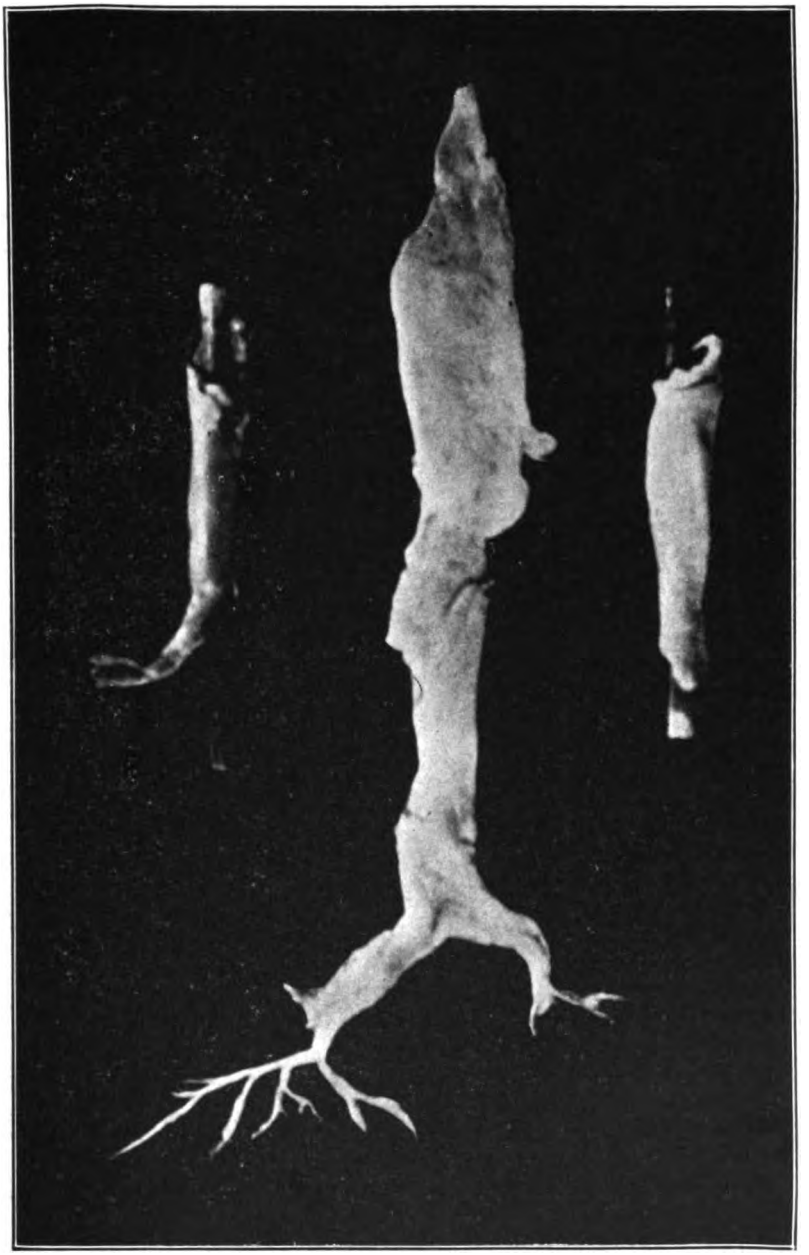

DIPHTHERITIC MEMBRANES.

The middle cast is from a girl of eight years; other casts from a brother and sister intubated 36 hours apart. These casts, and others, were obtained by pulling out the tube by means of the string during an expiratory effort. This maneuver has so far obviated the use of tracheotomy in my cases. A writer in the February (1905) *Laryngoscope* found it necessary to do 25 tracheotomies in 108 cases. W. T. W.

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tube, but without success. I gave the child a rest, and then tried again with the one-year tube, but could not introduce it. The manipulations had increased the dyspnea. I then prepared to do a tracheotomy. When all was ready I gave the child a very little chloroform.

I made one more attempt at intubation, and was successful in introducing the three-year size by using just a little more force than usual.

The child revived greatly, coughed up a large quantity of the imprisoned mucus and then went to sleep.

The next day it had a temperature of 101 and respiration about 40, color good and no dyspnea.

The temperature record was not kept regularly. The respirations when taken were never below 40. The child died four days after intubation.

Autopsy showed tracheitis, bronchitis, and a consolidated lobe in one lung. Death was caused by pneumonia.

My especial interest was in the larynx, and here the cause of my difficulty in intubation was readily apparent.

The anterior wall of the larynx in the cricoid region was the seat of an ulcerative process which had destroyed the soft tissues and allowed a film of free cartilage to loop backward into the lumen of the larynx. Dr. MacCallum has kindly studied this for me, and regards it as an old process, and not due to a tube worn but four days.

I have here a vertical section of the anterior portion of the larynx, showing the ulceration, and the free loop of cartilage in cross section. This finding fits in with the previous history of the case, which was that its respiration was always noisy since a few weeks after birth. It had a chronic cough, for which it had been taken to the Johns Hopkins dispensary on several occasions. At one time the cough was evidently regarded as due to some syphilitic lesion, as the infant was treated by mercurial inunctions. At another time it was thought to be due to an enlarged thymus. The thymus was not unduly large, and neither were the bronchial lymph nodes. It seems probable that the cough was due to this chronic ulcerative process in the larynx.

No membrane was seen. No cultures were made. No diphtheria bacilli were found in smears from trachea and bronchi.

Rapid Return of Stenosis.—In some cases almost complete stenosis returns immediately upon the removal of the tube, and it is in this class of cases where previous experience in intubation will make the difference between life and death to the patient.

I have never lost a patient from this cause, but have come so near it that for several years I have not removed the tube without having another ready for immediate insertion.

In one of my prolonged cases, when the tube was coughed out, dyspnea was so urgent that I had to have two assistants dressed and ready to fly to their positions at a moment's notice day or night. A duplicate tube was always at hand. I was compelled to live in the house of the patient for five weeks.

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In one case, in the suburbs, the tube was coughed up and the child suffocated before I could be gotten.

Where the *stenosis occurs immediately* after the removal of the tube it is probably due to swollen tissues above the glottis which fall together and prevent inspiration.

The gradual return of stenosis is probably due to edema below the glottis. This, fortunately, is the usual form of returning stenosis.

Retained Tubes.—This is the greatest bugbear of the intubationist. O'Dwyer used this term to designate "the necessity of continuing intubation long after the disappearance of the original disease (diphtheria)."

After the use of antitoxin, the evidences of diptheria rarely persist over a week, yet occasionally a tube which has been inserted during an attack of diphtheria has to be retained for weeks or months. I have had six cases which come under this heading:

One of 17 days' duration, 4 intubations.
One of 22 days' duration, 5 intubations.
One of 35 days' duration, 5 intubations.
One of 38 days' duration, 34 intubations.
One of 42 days' duration, 3 intubations.
One of 84 days' duration, 7 intubations.

All have made perfect recoveries. In two there was no membrane seen and cultures were negative. In one no membrane was seen, but cultures were positive. In one membrane came up during operation. In two no membrane was seen and no cultures made.

O'Dwyer believed that the cause of persistent stenosis following intubation in laryngeal diphtheria was almost solely due to traumatism; more often to improperly-fitting tubes, less often to laceration produced by inexperienced operators.

John Rogers, Jr., believes that retained tubes are due to a chronically-inflamed and hyperthropic condition of the subglottic tissues, which is a sequel of the original diphtheria inflammation, and not in any way the result of operative treatment. To this rule he finds but few exceptions. With this view I am inclined to agree.

AFTER-CARE.

Feeding is in most cases almost our sole concern after intubation and antitoxin. Children at the breast usually nurse very well. In children who take the bottle the Casselberry method should be employed. One infant a year old, whenever hungry, would throw his head back into the Casselberry position. In a recent case a child of four years still drank milk from a bottle. Twenty-four hours after intubation his physician telephoned that he could take no nourishment and was coughing incessantly. I traveled 20 miles by sleigh on a winter night just to stand the boy on his head. He drank a pint of milk immediately, and the cough was greatly ameliorated by the drainage of the mucus from the trachea into the pharynx. To older children I give almost any food suitable for a sick child. In only one case have I found food to enter the

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tube. In that instance it was partially obstructed by what appeared to be bread.

In two cases I had to resort to nasal feeding. It was easily done and exceedingly satisfactory.

Obstruction of Tubes.—In older children membrane which loosens up after intubation usually causes the expulsion of the tube, the membrane following it. In these cases the tube should not fit tightly. I have had several such cases.

At times the tube, instead of becoming suddenly blocked with loose membrane, becomes gradually filled with a granular deposit —probably decomposed membrane. Here the tubes must be removed and cleaned. In one case I had to remove and clean the tube three times in 17 days.

I have had but one death from an obstructed tube. This was a baby of 11 months. Thirty-six hours after intubation it was apparently well, when the mother saw it suddenly begin to struggle; in a few minutes it was dead. I found a tough piece of membrane wedged in the lower end of the tube. There seems to be no way of avoiding such an accident save to have a physician with assistants constantly in the room with the patient throughout the wearing of the tube.

Swallowing the Tube.—No serious results are recorded from this accident. When the tube is coughed out of the larynx it almost invariably comes into the mouth and is taken out by the nurse or patient. In one of my cases tube and thread were swallowed, and passed from the bowel 36 hours later without trouble. The tube had been in place but a few minutes. I left the child in charge of an assistant while I turned to attend to something. What happened I do not know, but when I was called the thread was just disappearing in the mouth. I grasped at it, but it eluded me and went on down.

After-Effects.—I have not recorded nor can I remember a case of paralysis in any of my intubated cases. In every case the voice has returned to normal. In a year-old baby which wore its tube 38 days there was an interesting psychic phenomenon. Before its illness it could say "mamma," "papa," "bye-bye" and other baby words, and could imitate the sounds of bees, and give an excellent imitation of the sounds made by a neighboring windmill. For the first few days after intubation it would attempt these sounds. Later on it abandoned all attempts. After the tube was removed it made no attempts to speak for about eight or nine months. It could laugh and cry in a perfectly normal manner, so I concluded that not the condition of the larynx, but that of the mind was responsible.

Another little child became quite hysterical when it found its voice after wearing the tube five weeks.

TIME OF INTUBATION.

In nearly every case I have been called to there has been no room for debate as to whether or not to intubate. The dyspnea has been so marked that immediate operation was called for.

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A good rule, whose author I have forgotten, is this: "When in doubt—intubate." Undoubtedly the early use of antitoxin will obviate the necessity for operation in a large percentage of cases. Still we must not expect too much of it. I have within a year seen a death caused from asphyxia because the physician had delayed operation too long in the hope that antitoxin would relieve the stenosis. I believe in early intubation, wherever there are stenotic symptoms, mainly for two reasons:

(1) The stenosis may became suddenly worse in the physician's absence.

(2) The tendency of broncho-pneumonia may thereby be lessened.

Sudden Increase of Stenosis.—It is surprising through what a small opening a child can breathe in a normal way. A year-old infant can breathe nicely through a space the diameter of a match-stick. If such an infant shows signs of stenosis we know the lumen of the larynx is smaller than the diameter of a match-stick. To one who has watched in the pharynx the rapidity with which diphtheritic membrane can form it occasions no surprise to have such a larynx close up completely in an hour or two. A friend of mine, who has had a good many patients intubated, and is alert to the indications for operation, saw a child suffering with slight dyspnea. He paid a call in the suburbs, and then returned to his case of croup, only to find it moribund. I was called on one occasion to intubate a child. The symptoms were not very urgent. I did not have the tube appropriate to the age, so sent for one and returned in an hour. I found the house in confusion, and the child was said to be dying. Its pulse was feeble and fluttering. The chest heaved slightly a few times, but there was no respiration. In a few minutes the tube was in the larynx. The child made no resistance; it was like operating upon a cadaver. In a few seconds there was a slight respiration, then another, then a slight cough; then the respirations became stronger and more frequent. In half an hour the pulse and respiration were fairly natural. It seemed almost like a resurrection from the dead.

Broncho-Pneumonia. — Broncho-pneumonia exists in three-fourths of fatal cases of diphtheria (Holt), and in a larger proportion of cases where there has been involvement of the larynx, trachea or bronchi. It is thought to be due to the aspiration of bacteria from above.

In nearly every intubated case, whether stenosis is mild or severe, a large quantity of mucus will be released. Air can pass through a larynx for many hours after the passage of mucus has been obstructed.

Sometimes many drachms of mucus are thus released. It must necessarily have filled the most of the trachea, bronchi and bronchioles. As it accumulates it must go deeper and deeper, and it seems to me must be a factor in carrying the germs which give rise to broncho-pneumonia.

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TIME OF EXTUBATION.

Experience seems to have shown that at the end of five days is the proper time to remove the tube in cases where antitoxin has been used. By this time all membrane has usually disappeared. I am in the habit, if the child is taking food well, of waiting a day or two longer, with the hope that the tube may be coughed up or that the necessity for reintubation will be less likely to exist. With the modern hard rubber tubes I see no objection to this delay. With the old-style metal tubes it was advisable to remove them at the earliest possible moment because of calcareous concretions that would roughen them and irritate the tissues. I have on three occasions left hard rubber tubes in the larynx for three weeks, and removed them in a perfectly clean condition.

WILL INTUBATION BECOME A LOST ART?

The greatest field for intubation has been for the relief of stenosis in laryngeal diphtheria. The use of diphtheria antitoxin has greatly narrowed this field in the following ways:

In the first place, the prophylactic use of the serum has greatly diminished the number of cases of diphtheria in general.

In the next place, inasmuch as most cases of laryngeal diphtheria are secondary to primary diphtheria of the nose, fauces or pharynx, the early use of antitoxin in the primary infection will prevent the secondary laryngeal involvement.

Lastly, in the cases where the larynx is involved, the early use of the serum will obviate the necessity for intubation in about 50 per cent. of the cases.

To illustrate how narrow this field has become, there were reported last year in Baltimore, which contains one-half the population of the State of Maryland, but 1272 cases of diphtheria of all varieties, or less than two cases to each physician.

Still, unless diphtheria becomes entirely stamped out, there will always be an occasional need for the operation, even in the practice of the most careful physicians, for cases of primary laryngeal diphtheria are often so insidious that stenotic symptoms are the first to attract attention. "Absorption of the poison by the laryngeal mucous membrane is very feeble as compared with that which takes place from the pharynx" (Holt), and the symptoms due to toxemia may not be present even when stenosis is far enough advanced to demand an operation.

In the last case I operated upon the child played with her toys all the day and slept all the night (with the exception of occasional coughing spells) before the day of intubation. At operation a cast of the trachea was removed. Then there will arise cases of stenosis during measles, and even occasional cases of catarrhal laryngitis, that will require operative treatment.

Every general practitioner should be able to intubate, but the number of cases arising in his own practice will not hereafter be sufficient to keep him in practice, and it will doubtless mostly be done by a few to whom the cases will be referred.

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ABDOMINAL MASSAGE: INDICATIONS AND TECHNIQUE.

By Reni Tauer,
Baltimore.

THE physiological action of abdominal massage is a very complicated process, the thorough understanding of which is derived more from practical experience than from experimental proof. The safest comprehension is given us by the more frequently-observed results in massage of muscles and joints. In the use of massage we count on two modes of action—mechanical and reflex.

In regard to organs and tissues of the body which can be treated most effectively, those that afford the best results are the stomach, the intestines, the lymph glands, and the skeletal muscles. Especially disturbances of motor functions, caused by atony of the musculature; a slight grade of stenosis, suppressed secretion, chronic catarrh, or nervous contractures offer indications for abdominal massage.

One must understand by the term "abdominal massage" the manipulation of the contents of the abdominal cavity as a whole, even though there is one organ of this cavity which we especially wish to treat. From my experience I have concluded that the greatest value of massage is in its action on the circulatory system.

The greatest puzzle that human metabolism offers is that the nourishing blood-stream, which reaches every portion of the body and penetrates every capillary network as long as the heart continues to beat, should lose the power to float away tissues which have lost their vitality and are no longer of any use, and fail to replace them by healthy material. These useless tissues, such as the "metaplasm" of old age and decay, cannot be removed by massage, and it is always an unpleasant task to fatigue by mechanical manipulation a body already much exhausted. Besides, it must be acknowledged that a direct mechanical movement of the contents of the hollow viscera is seldom possible and always questionable in its results. During many years of clinical work, and with abundant material at my disposal, this has been accomplished in only one case. An advanced case of gastric carcinoma had reached the stage of stenosis of the pylorus, and the patient was prepared for operation. Nourished per rectum for five days, the stomach washings repeatedly showed remnants of food. For diagnostic purposes I attempted the Zabludovsky maneuver with the patient in the knee-chest position. In this case the extremely flaccid abdominal wall enabled me to take hold of the stomach wall through the abdominal "skin" (for it was nothing more) and to throw the contents of the stomach against the pylorus. Stools obtained 12 hours later contained raisins which the patient had eaten 12 days before. The fact that the patient had a large frame and that the abdominal cavity was of great size helped a great deal

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in carrying out this maneuver. Where these conditions fail I can hardly understand how on such an elastic field one can produce decided effects through mechanical manipulation, for it is not the mechanical effect that we are striving for, but the absorption of any possible infiltration through increased circulation in the abdominal musculature and in the tissues of the glands and hollow viscera, and the peristalsis reflexly excited through stimulation of the intestinal nerves. Similar to this is the effect on the secretion of digestive juice, which is proved by increased diuresis without any change in the blood-pressure.

Stomach and intestines are, as a digestive tract, a physiological whole, and almost all gastric disturbances which come under manual treatment are analogous with disturbances of the bowels. After pregnancies and in wasting diseases which result in chronic constipation, because of atony of the intestinal muscle or atrophy of the abdominal muscle, it is much more important to exert influence on the ganglia of the sympathetic system than to merely remove the contents of the intestine through manual movements.

In cases of acute intestinal obstruction, as well as ileus, massage is a "double-edged" sword, and it is the same in all forms of enteritis, because one is never sure that an area of suppuration may not be present and may be caused to perforate. While contractions of the abdominal wall will usually disappear under careful massage, because it is connected with the increased reflex irritability of the muscles, energetic manipulation may render the condition worse.

In studying cases suitable for massage therapy the largest proportion is offered by (1) those with abnormal fat formation, seen often in persons accustomed to a sedentary mode of living; (2) abdominal plethora; (3) chronic catarrh, with infiltrated areas in the mucous membrane, and lastly, (4) cases with simple disturbances of innervation which can be observed in otherwise healthy persons.

Abdominal massage, as soon as it has taken on the character of a true massage, has an influence not only on organs near the surface, but also on the deeper ones, and whoever exercises this function must be well at home in the topographical anatomy of the peritoneal cavity and the pelvis. It also appears to me important that this branch of therapy should be more commonly utilized, and should interest not only those who expect to be simply masseurs, but also medical men in general. The masseur looks at it from the standpoint of the specialist, and values it perhaps too highly, while the medical man, being ignorant of the subject, disregards it.

"The abdomen is the seat of all passions," says Hippocrates, but even in case of people with temperate habits the intestine, because of its being, so to speak, a storeroom of fermentation products, readily becomes the seat of disease.

The followers of Lucullus when they have ailments always prefer at first a comfortable purge, but a time will come when the

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vagus nerve and the sympathetic, irritated by hyperacidity, refuse to do their work, and the motor function of the stomach sinks so far that the result is a heaping up of fermentative matter. This condition will next descend to the intestines and a chronic gastritis will develop. In this state the only remedy is well-directed massage.

Pflüger's law of excitation reads: "All immoderate stimulation will cause decreasing activity in the part supplied by the nerve." From this principle we also extract important advice for our technique.

TECHNIQUE.

Though one cannot lay down a general method, there are certain rules which must be followed. From the variety of manipulations recommended by the different authors one can see that in each case individual technique is used.

One of the rules laid down by my teacher—Metzger—was: "In massage one has much more need of steadiness and perseverance than of strength." And, in fact, he even warned against using much force. While one cannot always prevent small tears in blood-vessels, especially when massaging anemic subjects, nevertheless bruises on the bodies of the patients are signs of a bad technique, and it has been my experience that it is far from easy to acquire the necessary skill.

The masseur does well to warn the patient that after the first treatment he must expect some soreness of the muscles. I consider a well-regulated massage, and one in which the intervals between treatments are short, of much more service than one performed in an irregular manner, with no regard to the length of intervals.

Greasing the abdominal wall is superfluous; in fact, it even prevents the friction of one muscle against another. Though the observations of some idealistic authors in regard to "magnetic" and "sympathetic" action seems to me fabulous, one must acknowledge that a sure and skillful touch is more agreeable to a patient than uncertain sliding of the hand over an oily surface.

There is a fixed rule, common to all methods, that the patient should be stretched out at full length, with head slightly raised. She should be on the left side of the bed, as near as possible to the edge, face to face with the masseur.

Maneuver 1.—The left hand is placed on the abdomen in such a way that its palmar surface lies over the umbilicus. Using the fingers of the right hand as the power, and being careful to avoid any claw formation of the fingers of the left hand, make movements in a semicircle from left to right, and then, using the reverse position, the same movements also from left to right.

Maneuver 2.—The hand follows the course of the colon, begin-

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ning in the ileocecal region, exerting with both hands rather constant pressure; then along the course of the ascending colon as far as the lower border of the ribs on the right side, and finally passing your hand over the curving course of the transverse colon. Now, facing the patient, follow the course of the descending colon, beginning above the umbilicus and ending down in the pelvis, making at first a half-circle and ending with the form of the Roman S.

Maneuver 3 consists in kneading the abdomen, using first one hand and then the other, while the free hand acts as a support. This is a difficult manipulation and must be well learned. One brings into action here the ball of the thumb and palm of the hand, while the fingers of the other hand are used in antagonism to prevent the unpleasant sensation of tearing.

Maneuver 4.—Then follows the so-called "*Durchschneiden des Bauches,*" using the radial side of the right hand with thumb abducted, performing a sort of cradling motion in vertical direction, exerting strong pressure above the umbilicus and ending the maneuver with deep-going vibrations.

Maneuver 5.—More general vibrations are produced by this maneuver. Facing the patient, you take hold of the diagonal muscles of both sides. Now exert strong central pressure and cause shaking movements of the whole abdomen. The strength for doing this comes chiefly from the elbow.

Maneuver 6.—To exert especially on the stomach and the ganglia of the abdominal cavity one places both hands in such a manner on the costal border that the thumbs come to lie on both sides of the xiphon, and rubs with moderate force in the direction of the stomach. As a continuation of this maneuver one places the left hand as support under the right border of the ribs, while the right hand performs deep vertical movements, following the cylindrical outline of the stomach from left to right.

Maneuver 7.—An effective conclusion of abdominal massage is the "*Erschütterung.*" The left hand is dug vertically deep into the pelvis immediately above the symphysis in order to protect the bladder against painful or at least very disagreeable reflex phenomena, while the right hand rests flat on the umbilicus. Exerting gradually increasing pressure, you then cause strong, evenly-distributed, trembling movements. During this maneuver it is necessary for the abdominal muscles of the patient to be relaxed; therefore it can only be accomplished during the period of expiration.

Of course, in all these maneuvers it should be left to the judgment of the masseur how often these movements may be repeated at one sitting. I take it as an indication to cease when the epidermis of the patient shows signs of moisture.

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Current Literature.

REVIEW IN MEDICINE.

Under the Supervision of Thomas R. Brown, M.D., Baltimore.

SPLENIC ANEMIA OF INFANCY.

Springthorpe (*Lancet,* October 8, 1904) furnishes clinical histories of six cases of splenic anemia occurring in one family. The contribution is one of extreme interest because of the great amount of discussion indulged in during the past few years on the subject of the splenic anemias and their relation to other forms of anemia. Of the cases affected, four were in one generation, two in the succeeding generation. Of the former generation, besides the four cases affected, three of whom were females, one male, there were eight brothers and sisters, five of whom were healthy, two died in infancy, while one died from cardiac dropsy at the age of 27. The offspring of those affected seemed to be peculiarly delicate, though up to the present time (none of the children are old) only one has developed the disease. The clinical history of the cases showed nothing especially peculiar. The hemoglobin was generally reduced markedly, although not as a rule to so great an extent as the red-blood corpuscles. Some of the cases showed moderate increase of leucocytes, others moderate diminution. Springthorpe concludes:

"In obscure causation, clinical history, blood picture, and pathology they are typical illustrations of splenic anemia, and their totality strongly supports the British and American view of considering that condition as a disease *sui generis.* As regards causation, I remain entirely in the dark. There is no evidence of hereditary syphilis, rickets, or other known constitutional cause, nor can typhoid fever be accepted as a satisfactory explanation. The same applies to any other certain and sufficient exciting cause. As regards identity, all the adult cases have the same clinical history and blood pictures, though in varying degrees.

"In this category the future development of the infantile cases is a matter of peculiar interest. The different patients, again, have apparently been affected at different ages, and one at least seems to date back only a few years. Locality and occupation similarly seem to have played no certain part in causation. The futility of the ordinary and even of several extraordinary methods of treating anemia in such cases is also well evidenced. Again, there is the light that the two cases of splenectomy may and do throw upon the

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functions of that ill-understood organ, the spleen. Evidently it is not essential to life, to digestion, or to blood development, and some people even do better without it. All this, of course, has been already known, but not so markedly exemplified locally, and yet any attempt to remove the spleen in the other great blood disease attended with splenic enlargement, viz., splenic leukemia, seems fraught with the utmost peril and is almost invariably fatal. Apparently this is not from any distinctly splenic function, but from different vascular conditions. Finally, the future of the spleenless cases is a matter worthy of continued study. So far there seems to have been no consecutive lymphatic enlargement, and apart from the blood (and even there not distinctively) there has been no evidence of substitutional action on the part of the bone-marrow. The one patent fact is that the patients are both much better in every way without their spleens than they were with them, though they are still vulnerable and not in a state of rude health, and that the proper treatment for such cases is not at present so much medical as surgical."

In this connection the clinical lecture of Batty Shaw on the relationship of splenic anemia of infancy to other forms of blood disease occurring in infancy and childhood (*Lancet,* December 3, 1904) is of interest. In this lecture he considers first the blood in healthy infants and in healthy children from two years of age to the time of puberty; he next considers the conditions of the blood in the severe secondary anemias of infancy and childhood; and lastly, in cases of primary anemias of infancy and childhood. Under each of these headings he considers first the blood picture and then the morbid anatomy of the condition. According to Shaw, there is no sharp line of demarkation between any of the groups which have been dignified by special name. Each disorder shows varying degrees of development of the various characteristics of blood disorder—alterations in number, size and morphological characters of red cells, leucocytosis affecting various leocoblasts, loss of hemoglobin, enlargement of the spleen, etc.

As Shaw well says, there is increasing importance of a closer study of lymphoid tissues throughout the body, and more especially of the characters of the cellular elements lying within the reticulum of each tissue. The work of Pappenheim and others has shown that in leukemia the marrow is affected whatever be the type of the disease, while as regards the *rôle* played by the spleen and lymph glands a definite conclusion cannot as yet be reached. Many other questions of extreme interest in this question remain still unanswered, as, for example, what is the nature of the particular agents which provoke the hyperplasia in the hematopoietic tissues, why this hyperplasia is so much more easily excited in children than in adults, why there may be enlargement of the spleen in the adult without profound changes in the blood, while in the infant enlargement of the spleen is usually associated with the blood picture closely resembling that of leukemia. To quote Shaw, "It is more in harmony with recent investigations to insist upon the

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close relationship of all blood diseases — anemias, primary and secondard, and leukemias — rather than to attempt to separate them at the bedside as sharply-defined groups. Pathological considerations do not at present justify the recognition as separate diseases of what are really merely different degrees of reaction of the blood-forming tissues to various excitants, the nature of which at present is obscure, nor do the results of treatment or the course of the diseases except in those cases resulting from curable causes, like syphilis, justify us in separating them. To sum up, it may be said that the infant is suffering from a disordered function of the blood-forming tissues, and that the blood examination reveals features which in part are known to exist in healthy children, but which also are met with in cases which at present recall pernicious anemia and leukemia."

* * *

THE URIC-ACID THEORY OF GOUT.

From Great Britain, the home of gout, and also of many of the theories as to its causation, comes an article by Watson on reasons for abandoning the uric-acid theory of gout (*British Medical Journal*, January 21, 1905). These reasons are based on investigations which Watson commenced in 1898. At the time of the inception of these investigations their author was strongly in favor of the uric-acid theory of gout, but as the research developed the defects of the theory became more and more apparent. According to Watson, the general adoption of the uric-acid theory has been attended by two unfortunate results—first, it has unduly narrowed the field of inquiry relative to the disease, and second, it has obscured the significance of the facts actually observed. The investigation deals in turn with chemical, histological and clinical questions. The first series of observations were to determine whether or no uric acid was present in the blood of birds, Garrod and Luff being unable to find it therein. Watson, on the other hand, showed conclusively that uric acid is normally present in the blood of birds, which negatives the view that uric acid is normally formed in the kidneys.

Watson then in turn considers uric acid in pathological fluids, uric-acid excretion in gout, the histological appearances of gout in lower animals, the histological appearances of gout in man, ending his observation with a short clinical survey of the disease. The author's general conclusions are that the evidence of the laboratory is in harmony with the teaching of clinical experience and shows that uric acid is not an important etiological factor in the production of gout. The author believes, first, that there is an infective element in the disease, and second, that the uric acid is the feature which gives the inflammation its specific character. According to this view, the chief source of infection is the alimentary tract, and an injudicious dietary acts mainly in virtue of its influence on the bacteria present in the digestive tract.

Watson expecially commends the definition of gout recently given by Woods Hutchinson in the *Lancet*: "Gout is a toxemia

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of gastro-intestinal origin accompanied by the formation of an excess of urates, this excess of urates being due to the breaking down of the leucocytes and fixed cells in the attempt to neutralize the poison; in other words, being the measure of the resisting power of the tissues. The formation and introduction of the toxins, be it well understood, are by no means confined to the gouty; it is only the nature of the resistance of the body to them that gives the character of gout."

In conclusion, Watson suggests the following lines of investigation as likely to prove fruitful in connection with the subject of the etiology of gout: First, to investigate the influence of (a) a meat diet and (b) a carbohydrate diet on the digestive secretions, and on the ductless glands, especial attention being directed to the thyroid gland and the bone-marrow, and second, to repeat Ebstein's experiments with the aid of skilled bacteriological methods.

* * *

THE TOXIC EFFECTS OF FORMALDEHYDE AND FORMALIN.

Fischer (*Journal of Experimental Medicine,* February 4, 1905) contributes an article of interest and value on the subject of the poisonous effects of formaldehyde and formalin. The article is of special value because of the ever-increasing use of this substance. In the first place, the changes in the lungs are considered after the inhalation of formaldehyde, guinea-pigs, rats, dogs and cats being used in these experiments. After this Fischer gives the results of his experiments upon animals in injection of formalin into the stomach, within the peritoneal cavity, into the lung, into the muscles, and subcutaneously, while an especial section is devoted to the study of the effects of formalin and formaldehyde upon the eye.

The changes in the liver, in the kidneys and in the lungs are considered in detail, while the article is concluded with a consideration of the effects of chronic formalin poisoning. The conclusions of this interesting and valuable piece of work are as follows:

1. The inhalation of formaldehyde gas in even small quantities is followed by bronchitis and pneumonia. Pneumonia is due to the inhalation of the gas, and not to secondary infection.

2. Formalin belongs to that rare group of poisons which are capable of producing death suddenly when swallowed.

3. The introduction of formalin into the stomach is followed by the production of a gastritis which varies greatly in character. The duodenum and upper jejunum may also be involved in the inflammatory process.

4. Intraperitoneal injections of formalin cause peritonitis of a fibrino-hemorrhagic character. A definite reaction is obtained when very dilute formalin (1-1000) is employed. In the peritoneal

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cavity formalin exercises a destructive action upon all organs (pancreas, liver, peritoneal fat, Fallopian tubes, etc.) with which it comes in contact and causes inflammation in these organs.

5. The lethal dose of formalin when injected intraperitoneally into guinea-pigs is approximately 2 c. c. of 1-1000 formalin for each 100 grams of body weight.

6. The injection of formalin into the lungs is followed by pneumonia and bronchitis.

7. The inflammation which follows subcutaneous injections of formalin is characterized by intense exudation.

8. The injection of formalin into the muscles produces myositis.

9. The injection of formalin into the anterior chamber of the eye causes the accumulation of an exudate containing leucocytes and fibrin. When formalin is dropped into the conjunctival sac iritis follows, and may be severe enough to destroy the eye.

10. Formalin in whatever way introduced into the body is absorbed, and is then capable of producing lesions in the parenchymatous organs.

11. Changes in the liver after absorption of formalin consist of a mild or severe grade of cloudy swelling accompanied by vacuolation of the protoplasm, changes in the nuclei, and leucocytic infiltration. Focal necrosis may result. Similar changes follow the inhalation of formaldehyde.

12. The injection of formalin or the inhalation of the vapors of formaldehyde produces cloudy swelling of the parenchyma of the kidney. Focal necrosis may result.

13. Pneumonia and bronchitis are found in all animals after the injection of formalin.

14. The leucocytic infiltration which follows the introduction of formalin into an organ has these general characteristics: The eosinophiles are the first leucocytes to appear; these are followed by the other polynuclear leucocytes; last appear the large and small mononuclear leucocytes. Similar phenomena occur in the trachea, bronchi and lungs of animals subjected to formaldehyde inhalations.

15. Formalin is, directly or indirectly, chemiotactic for leucocytes. The tissues which are not infiltrated with leucocytes after the injection of formalin are those which have been so injured by the chemical that an inflammatory reaction is impossible.

16. Animals subjected to chronic poisoning with formalin administered by intraperitoneal injection develop fibrinous peritonitis associated with marked eosinophilia. The changes in the kidneys and liver consist of cloudy swelling, fatty degeneration, focal necrosis and leucocytic infiltration.

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REVIEW IN PATHOLOGY AND BACTERIOLOGY.

Under the Supervision of José L. Hirsh, M.D., Baltimore.

PERNICIOUS ANEMIA — A HISTOLOGICAL STUDY OF SEVENTEEN CASES. B. L. Gulland and Alex. Goodall. *Journal of Pathology and Bacteriology,* January, 1905.

The methods of preparing the specimens for study were as follows: The bone-marrow was in every case taken from the femur and fixed in formol alcohol. Dry films were also examined in each case. In some cases pieces of marrow were fixed in 10 per cent. formalin, in water half-saturated with corrosive sublimate. This gave excellent fixation of hemaglobin. Some of the later specimens were prepared by making films of marrow mixed with 0.9 per cent. salt solution.

Specimens of the other organs were occasionally placed in formol alcohol, more usually in 10 per cent. formalin, and in one or two instances in saturated sublimate solution or sublimated formalin. They were then embedded and cut in paraffin.

The stains used were (a) eosin followed by methylene blue. We obtained the best results by using saturated solutions, and first overstaining with eosin, washing thoroughly with water, and then overstaining with methylene blue. The sections were then decolorized with methylated spirit till the colors appeared differentiated to the naked eye. The subsequent dehydration in absolute alcohol results in a very pretty contrast stain, which has the advantage of bringing out all leucocyte granules. Some sections were also stained with triacid, hematein and eosin, and Jenner's stain. (b) In order to demonstrate iron pigment, sections were immersed in a mixture of potassium ferrocyanide and hydrochloric acid, washed, and counterstained with carmalum.

From a post-mortem study of 17 cases the authors have concluded as follows:

1. The essential features of the disease and the criterion in its diagnosis is that it is a megaloblastic anemia.

2. The widespread evidences of blood destruction occurring in liver, spleen, hemolymph glands, and marrow indicate albormal vulnerability in the blood-cells rather than a pathologically-excessive hemolytic action on the part of so many diverse tissues.

3. The accumulation of iron in the liver is due partly to the disintegration of weakened or weakly blood corpuscles by endothelial cells and leucocytes, and partly (and to a much greater extent) to storage of iron, which is the product of red-blood corpuscles which have been disintegrated by phagocytes elsewhere. This accumulation of iron in the liver is not peculiar to pernicious anemia, and is the normal result of the abnormal amount of blood destruction.

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4. There is no direct evidence of special disease of the intestine, and the intestine need not be the primary seat of toxin production, though in certain cases, and notably in bothriocephalus anemia, it probably is so.

5. In some part of the body a toxin is produced which acts directly on the bone-marrow, interfering with normoblastic blood formation, leading to megaloblastic formation, and acting with negative chemiotaxis upon leucocytes, especially of neutrophile variety.

6. The large red-blood corpuscles produced by such a manner, perhaps as much from their size as from inherent weakness, fall a ready prey to endothelial cells and leucocytes in the hemolytic organs, notably hemolymph glands, spleen, and marrow.

7. It is quite possible that certain individuals, from congenital defect in the marrow, may be specially prone to the disease, as there is little doubt that the megaloblastic degeneration represents a reversion to the fetal type.

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PROTECTIVE INOCULATION AGAINST ASIATIC CHOLERA. R. P. Strong. *Journal of Infectious Diseases,* January, 1905.

A satisfactory protective against Asiatic cholera must probably contain substances which give rise to antitoxic as well as bactericidal bodies in the blood sera of the inoculated. With these two considerations in mind—(1) that the cholera toxin exists as an integral part of the bacterial cell, and (2) that it is set free after the death of the organism, probably partly through the action of its own proteolytic enzyme, which is not destroyed at 60° C.—the author was enabled to separate the other immunizing substances from the bodies of the bacteria by a process of autolytic digestion. Such a substance recommended itself as a trial material for preventive inoculation. Numerous experiments were carried out with this prophylactic, and as a result Strong offers the conclusions:

1. By the autolytic digestion of carefully-killed cholera spirilla in an aqueous fluid the receptors become separated from the bacterial cells and may be filtered off in solution.

2. The injection of these free receptors into both man and animals furnishes a means of producing high bactericidal and agglutinative blood sera. The antitoxic value of these sera is, however, moderate.

3. The subcutaneous injection into man of such free receptors is not only free from danger, but produces practically no local disturbance and only a slight general reaction.

4. Hence the method is a practical one for producing a cholera-immune serum in man.

5. It is highly desirable that this cholera prophylactic be given a thorough practical test.

6. It is possible that by the application to the pest bacillus of a slight modification of this method a more satisfactory prophylactic against bubonic plague could be obtained.

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ON THE POWER OF THE LIVER TO DESTROY DIPHTHERIA TOXIN. Lauder Brunton. *Journal of Pathology and Bacteriology*, November, 1904.

A number of years ago it was shown by several observers that the liver has the power of aresting certain poisons on their way from the intestines, and thus preventing them from reaching the general circulation. In consequence of this a dose of poison which would have proved fatal if injected directly into the general circulation had no effect when injected into the intestine or into the portal vein, provided, always, that the injection was made sufficiently slowly to allow the liver to act upon the poison. The action of the liver in thus preventing the toxic effects of poisons appear to be of a twofold nature: (1) It arrests the poison in its passage through the portal circulation, and excretes it into the bile, whence it passes again into the intestine. This action is exerted on mineral poisons and probably upon some organic poisons. (2) It actually destroys the poisons, converting them into substances which are either non-poisonous or only feebly toxic in comparison with the original poison. This action appears to be exerted upon various organic poisons. (3) In destroying organic poison the liver appears in some cases not only to remove their lethal power, but also to convert them into antidotes to the original poisons.

Brunton's researches were undertaken with the view to ascertaining whether the liver has the power of destroying or lessening the lethal activity of a toxin in the same way as it diminishes the poisonous power of vegetable alkaloids, such as morphine, strychnine, and quinine, and, secondly, whether it forms from a toxin an antitoxin which is excreted by the bile.

The experiments described show that the liver has the power of diminishing the lethal action of the diphtheria toxin which is circulated through it. This power is exerted upon the toxin whether it be circulated alone or mixed with blood. The bile appears to have a certain antitoxic power, for when 1 c. c. of diphtheria toxin had been mixed with the same quantity of bile obtained after circulating toxin through the liver it only killed a guinea-pig weighing 250 grams on the fourth day, whereas one-tenth of the same toxin unmixed with bile killed a guinea-pig of half the weight in half the time. In order to ascertain if possible what constituent of the liver had the power of lessening the activity of the diphtheria toxin, the expressed juice of a liver through which toxin had been circulated was inoculated along with diphtheria toxin. This showed a certain antitoxic power. From such expressed juice a nucleoproteid was separated which, when mixed with diphtheria toxin, exerted a marked antitoxic action distinctly stronger than that of the liver juice.

This power does not depend upon the blood present in the liver, but on the liver tissue itself. The bahavior of the liver in lessening the toxic power of the diphtheria toxin is similar to that which it exerts in ordinary digestion in lessening the toxic action of peptones. The experiments seem to confirm the view previously ex-

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pressed by Brunton that "immunity, natural or acquired, is nothing more than an extension to the cells of the tissues generally of a power which is constantly exercised during digestion by those of the intestine and liver."

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THE HISTOGENESIS OF THE TUBERCLE. James Miller. *Journal of Pathology and Bacteriology,* November, 1904.

The author has carried out numerous experiments to ascertain the source and the nature of the various cells in the formation and the further changes in the tubercle.

In the tuberculous process we have the reaction of the tissues to the tubercle bacillus, which is, after all, an irritating body. It differs from many other foreign bodies in that it is alive. It differs from many other micro-organisms in that it is of slow growth and in having a resistant envelope. Whether it is alive or dead, it differs from all other irritants in containing within itself a poison which, when set free, has this peculiar property, that it produces caseation, or a special form of cell-death. A foreign body possessing irritating properties in a sufficient degree produces precisely the same changes as tubercle bacilli do up to a certain point. A micro-organism sufficiently slow in its action, and yet sufficiently resistant, would, up to a certain point, produce precisely the same changes as the tubercle bacilli. This has been shown by Pawlowsky for actinomyces. The tubercle organism, however, whether alive or dead, contains a poison, and the moment that it is set free the whole aspect of the process is changed.

What, then, is the meaning of the tubercle? It is phagocytosis. It is an attempt of the cells of the body to shut off and destroy this irritant. Giant cells, epitheliod cells, lymphocytes are simply stages in the development of a phagocyte. Why the cells should unite to form a giant cell it is impossible to say. It is the natural tendency of the cells to do this in dealing with all foreign bodies. If the irritant persists in its irritant action, the cell continues to grow by the addition of fresh cells. If, on the other hand, its irritant action ceases, the process subsides. Here we have the explanation of the differences in the appearance of a cell accumulating around living bacilli and a cell accumulating around dead matter. That subsequent division of the nuclei of the giant cell should take place is probable, but in its essential nature the tubercle is a cell conglomeration, and in its purpose it is phagocytic.

The writer agrees with those who assign to the mononuclear cells of the blood a *rôle* of importance not only during the earlier stages of inflammation, but also in the later. In other words, he regards the mononuclear leucocytes not only as active phagocytes, but as cell elements of exceptional resisting powers, capable of remaining and developing into permanent constituents of the tissue. But not only do those cells which arrive first on the scene develop further and remain, but, at least in this one of the more

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chronic forms of inflammation, they are the main agents in sustaining the reaction. Under the action of the tubercle bacilli the mononuclear leucocytes from the very commencement lay down a network which may develop into that of the tubercle. The connective-tissue cells play their part, but they may not be essential. In other words, original mononuclear leucocytes may become original epitheloid cells. Further calls upon the body phagocytes are answered by the mononuclear leucocytes which accumulate at the margin of the area of irritation and gradually develop into cell forms, which, although resembling other epitheloid cells, retain certain of their characteristics. Giant cells result in the early stages of the process from a fusion of several epitheliod cells. In support of the view that they are phagocytes is the occurrence of some change in the bacilli within the cells whereby they stain black with osmic acid. Further, the bacilli disappear within the giant cells. Comparing tubercle giant cells with giant cells formed round foreign bodies, there is little or no difference to be seen in the early stages. The tubercle giant cells might be considered as a multinucleated phagocyte, similar to the foreign-body giant cell, surprised in its work by the setting free of a caseating material from the body of its victim. The writer further claims to show from his experiments that a typical tubercle may arise without the occurrence of mitotic division in the fixed cells of the part, and the cells present are indistinguishable from the mononuclear cells of the blood. He has also noted a peculiar friability among tubercles. They are broken by blood-vessels and become broken up, so that their constituents pass into the blood-stream and set up a cellular reaction indistinguishable from aggregations which are true tubercles. He has failed to find bacilli in these areas or in the areas to which they give rise.

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POISONING BY WOOD ALCOHOL—CASES OF DEATH AND BLINDNESS FROM COLUMBIAN SPIRITS AND OTHER METHYLATED PREPARATIONS. Frank Buller, M.D., and Casey A. Wood, M.D. *The Journal of the American Medical Association,* Vol. XLIII, No. 17.

Buller collected and tabulated 54 well-authenticated cases of methyl-alcohol amblyopia. The proportion of deaths to survival with blindness is a fairly constant one according to the authors. They found a minimum of 40 deaths in the above series. The Indian reservations have furnished a large number of cases of blindness and death from wood alcohol. It is usually taken by men who have been drinking hard, and the whiskey or other beverage containing ethyl alcohol being exhausted, in order to quiet their "nerves" during the sobering-up stage they will drink almost anything, so that wood alcohol or substances containing it are frequently resorted to—an example which seems certainly an instance of a man "hard pressed." An Indian, on finding his whiskey used

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up, drank red ink which contained wood alcohol. The result of this "high-ball" is not mentioned. The following names are given to wood alcohol on the commercial market, a deodorized variety of which, "Columbian spirits," is the best known and most widely used. Others are "Colonial spirits," "Union spirits," "Eagle spirits," "green-wood spirits, and "standard wood spirits." These deodorized spirits have almost the same vinous odor as pure ethyl alcohol, and are distinguished from it with difficulty. The fact that wood alcohol is used for rubbing in Tukish-bath establishments is well known, and, strange to say, is supposed to be harmless because applied externally, but the great absorbing power of skin is little appreciated, and, indeed, instances of poisoning from its use on the cutaneous surface are not wanting.

The president of the New York Board of Health in 1902 ordered an examination of the ingredients of Jamaica ginger and spirits of ammonia sold by druggists throughout the city. The official chemist found 40 out of 250 druggists to be substituting wood alcohol for grain spirits. He believes that 5000 cases will be found in the State, and has determined to prosecute them. Dr. Warren, pure-food chemist for the State of Pennsylvania, analyzed 1000 samples of cheap whiskey, and found that 90 per cent. contained some wood alcohol—indeed, some as high as 75 per cent.

Toxicity of Methyl Alcohol.—While a study of cases reported in this article must undoubtedly establish the fact that the moderate use of methyl alcohol can be borne by the majority of individuals, say in quantities of two or three ounces, this is, however, by no means true of large quantities. Many have a decided idiosyncrasy for it, and instances of blindness having been produced by the person drinking two teaspoonfuls; also from the inhalation of the fumes of methyl alcohol. The cumulative quality of methylism has been referred to by several writers, and observers have noted the remarkable delay in the onset of toxic symptoms, it not being uncommon for these to appear 24 hours or even longer after the ingestion of the poison. Indeed, it may be set down as a rule that, except in persons having an idiosyncrasy against wood alcohol or unless a large dose has been taken, not only may abdominal symptoms, the cardiac and nervous collapse, and the blindness be postponed, but even the fatal termination has in some instances been delayed for several days.

During the trial of the Baltimore suit against Gilbert & Co. a dramatic incident occurred based on this belief. A chemist drank a quantity of methylated spirits in open court. Of course, we know that, although this was a dangerous act, the chances were greatly in favor of the witness, especially if at the time his stomach was full of food, or if he took an emetic shortly after the draught of wood alcohol.

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Society Reports.

THE JOHNS HOPKINS HOSPITAL MEDICAL SOCIETY.

MEETING HELD JANUARY 16, 1905.

A Case of Arterio-Venous Aneurism.—Dr. Osler showed a patient exhibiting this condition. The man—now 31 years of age—had in his eleventh year received a knife wound just above the right knee. This was soon followed by a swelling of the calf of the leg, and a little later pulsation was noticed along the femoral artery with the development of a swelling in that region. The patient's health had remained good, and he was exceptionally vigorous except for some disability in the right lower limb and for attacks of hemorrhage from varicose veins in the lower leg. Along the outer thigh, reaching from the lower ribs to the foot, ran huge, tortuous, varicose veins, and the whole right leg was enlarged. Thrombi were palpable in the veins, some of them organized and a few probably calcified. There was a pulsating swelling in Scarpa's space and along the final artery. Over this a thrill was felt—most intensely about the middle of the thigh. In the abdomen was another pulsating tumor, eight inches across and occupying most of the hypogastrium and right iliac fossa. The pulsation here, too, was expansible in character, and over it a thrill could be feebly felt. The abdominal tumor was thought by Dr. Osler to be a large venous sinus associated with the enormous venous dilatation above a trauma arterio-venous aneurism. Its origin was, however, not perfectly clear, and, so far as he knew, there were no other cases like this one in the literature.

Immunization of Mice to Cancer.—Dr. G. H. A. Clowes made a preliminary report of recent work on this subject done by him at the New York Cancer Laboratory in conjunction with Dr. Gaylord. The work started from the study of two mice infected with cancer brought to this country from Professor Jensen of Copenhagen. These animals, which were suffering from subcutaneous carcinoma simplex, died before reaching Buffalo, but inoculations from their tumors, though unsuccessful in the first and second experimental series, finally "took" in a large percentage of the descendants of the inoculated animals (hereditary predisposition?), and the investigators then had cancer experimentally produced on which to work. For the inoculations the tumor material was macerated in twice its weight of sodium chloride and injected subcutaneously. A tumor appeared locally (on the average in about 40 per cent. of selected cases), the animal became cachetic, the blood-count fell, and the growth became in a few months nearly as large as the experimental animal. During the course of the work the cancer material became attenuated and a certain number of animals with small tumors recovered spontaneously. It was from these recovered mice that immunizing serum was obtained for subsequent experimentation. A series of mice were inoculated with the cancer; half of this number then received a dose (.2 c. c.) of immunizing serum, and the other half was kept as controls. This experiment was tried on animals with small, with medium, and

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with large tumors. In almost every case the difference between the history of the immunized mice and the "controls" was quite marked. In the former small tumors disappeared in about five days, larger tumors diminished to one-half their original size; in the latter the disease took its usual progress. All the control animals are now dead; all the immunized animals (with the exception of one dead from infection) are still alive. Later corroboratory experiments, while not quite so satisfactory as the earlier ones, gave in a general way always the same results. Tumors larger than a small cherry were never cured, but the treatment reduced their size and rendered them more easily operable. Mice cured by serum immunization had sera capable of further curing, or at least counteracting the disease. The sera of animals whose tumors had been improved by *x*-ray treatment were studied, but they proved not to be protective. The protecting body of this immunizing serum was not a cystolysin, possessed no particular hemolytic activity, and precipitin tests all gave negative results. Its protecting activity was not great, and a large dose was necessary. The hope for the application of these results to human concer lay, of course, in obtaining a case of spontaneously-cured (or possibly even improving) cancer and then testing the serum of this patient for protective or curative powers.

Pathological Changes.—Dr. Welch discussed the microscopical features of the specimens showed by Dr. Clowes. The type of tumor produced in the mice was, he said, of the solid or simplex type, without acini, and made up of polymorphous cells. The stroma was well developed and the connective tissue quite cellular. In the immunized animals the microscopical picture showed a striking change. In the larger tumors retrogressive metamorphosis was shown by necrosis of many cells at the center and by diminution in size of both protoplasm and nuclei of cells still preserved at the edge. In the small tumors it was almost impossible to tell that a carcinoma had ever been present, the picture being almost that of an inflammatory granuloma with multinuclear giant cells, necrotic center, and vascular connective-tissue shell. The observation of Drs. Clowes and Gaylord was, he said, a new and most important one. It offered at least a ray of hope for the treatment of human carcinoma, and while there was, as Dr. Clowes had said, a mathematical possibility that the results had been accidental, he felt this chance to be almost infinitesimal and the experiment practically conclusive within their own limits.

Apparatus for the Treatment of Fracture of the Femur.—This was described by Dr. Theodore Dunham, who devised it 10 years ago and has been using it successfully ever since. It consisted of a plaster spica of the hip, connected with a plaster bandage of the lower leg by two metal plates incorporated in the two plaster dressings and fastened together by seizing. In applying the apparatus the plaster bandages were first put on and the metal plates incorporated. Extension was then made in the required direction and the two metal plates lashed together. Coaptation splints might be added for older children, but were not indicated for young infants, in whom the thigh might be put up at right angles, giving the natural position for nursing. The apparatus gave a constant extension, was simple and easily applied, did not necessitate keeping the patient in bed, did not interfere with the routine of life, allowed the thigh to be frequently examined without removing the dressing, and had given excellent results. It was necessary

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to reapply the seizing at intervals in order to take up slack and keep extension perfect. Size and muscularity made the treatment unsatisfactory in adults.

Treatment of Esophageal Stricture.—Dr. Dunham also demonstrated a method of treatment of "impassable" stricture. A silk thread was passed into an ordinary drinking tube and its loose end allowed to float in a glass of water. The water was then sucked from the glass by the patient through the tube, and the silk thread was in this way washed down the esophagus; its lower end could then be caught through a gastrotomy wound and the stricture sowed by the method of Abbe. If regurgitation occurred or the patient resisted with his tongue, the thread could be passed through a rubber tube, inserted into the nostril, and could then be washed down by pouring water into an attached funnel. The lower end of the thread could then be caught through a gastrotomy and the upper end fished out from the pharynx. An instrument for cutting strictures was also shown, consisting of a guide bougie on which was locked an olivary-tipped dilator. Through the olive ran a cord, the two ends of which were brought out through the patient's mouth. The filiform guided the dilator, the stricture being thus put on the stretch by the olive and sawed by the string. This allowed further dilatation, and was followed by further sawing.

A wire and spindle dilator was also shown, provided with rubber protecting tubes for portions of the esophagus both above and below the stricture, and demonstrations of the use of the thread method were given on an apparatus constructed to represent esophageal stricture. Dr. Finney said that the great difficulty in these cases was in once getting something through, and that Dr. Dunham had made an important contribution to the solution of this problem. He himself had modified Abbe's method by simplifying knots in the cord, and after passing these through fastening larger and larger bits of gauze for the purpose of dilation.

Peripancreatic Abscess.—The case reported by Dr. Thayer was of a woman, aged 51, who had been taken in June with epigastric pain and jaundice. From this she recovered, but shortly afterward had an attack of very severe abdominal pain, accompanied by jaundice, fever, nausea, and vomiting. Fever was intermittent in character, and there were night-sweats. She complained of a "sore pain" in the left abdomen, where there was a slight prominence, especially above the iliac crest. A deep mass could be felt, which did not reach to the perinephritic region. Two weeks later, however, it had reached the loins and the kidney. Operation was performed by Dr. Finney, a peripancreatic abscess with fat necrosis being found and drained. Four similar cases had been seen at the Johns Hopkins Hospital, characterized by abdominal pain (the onset being in some cases exceedingly severe), usually jaundice, fever, sweats, sometimes chills, and, on palpation, a deep mass. This might be felt in the pancreas region, but in some cases extended much beyond it, even going well over to the right side. The clinical symptoms were fairly characteristic, and the diagnosis could usually be made without urine and stool examinations, which, to be of value, would be quite complex chemical procedures. Possibly the test for a fat-splitting ferment in the urine might be of use.

Surgical Treatment.—In peripancreatic abscess Dr. Finney said the surgeon could either do nothing or accomplish much by doing little. Opening

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and drainage were the essential features. If the case was seen early, it was better to do this in two stages, the tumor being isolated by gauze in the first, and opened in the second after peritoneal adhesions had formed.

MEETING HELD FEBRUARY 6, 1905.

Gastric Tetany.—Dr. Howard gave the clinical report of a patient who died in the Johns Hopkins Hospital with this condition. The man was 59 years of age, and had suffered for years with attacks of indigestion characterized by gastric pain, relieved by vomiting. There had never been blood in the vomitus. For three years before admission attacks of vomiting were frequent, in which large amounts of sour-stomach contents were brought up, but they were much improved by the regular use of the stomach tube. Previous to this regular lavage there had also been several typical attacks of tetany, but they had disappeared with the use of the stomach tube. The patient, however, began to lose weight and strength, and consulted Dr. Osler in November, 1904. A dilated stomach was found, peristalsis was visible, and operation was advised. This was, however, postponed, and the patient returned to the hospital in January, 1905, much improved. During his stay in the ward he was suddenly seized with epigastric pain following a dietary indiscretion, and some pain with cramp in the extremities accompanied it. Relief followed the use of the stomach tube, but an attack of tetany supervened. Every muscle of the body went into tetanic contraction, the typical contraction of the hand being present, as well as carpopedal spasm. Pain was agonizing, the face became purple, and sweating was profuse. Trousseau's symptom was present. For 24 hours there was almost complete suppression of urine, and death occurred in 40 hours, the patient being in a state of semicoma for the last 12 hours, during which time tetanic attacks were provoked by merely touching the patient's bed. There had been, Dr. Howard said, seven other cases of tetany in the Johns Hopkins Hospital. One was associated with repeated pregnancies, one came on after a severe fright, another was accompanied by a severe diarrhea, and a fourth by tuberculous meningitis. The remaining three had been gastric cases associated with dilation, hyperacidity, and hypersecretion. In adults the following forms of tetany were usually recognized: the epidemic, the gastrointestinal, the toxic (chloroform, etc.), and the forms accompanying pregnancy, acute infectious diseases, nephritis, nervous diseases, and thyroid extirpation. The cause of gastric tetany had been much discussed. Kussmall thought that dehydration was the essential feature; others, noting the frequent occurrence of attacks of tetany after the use of the stomach tube in patients with the disease, explained the phenomenon as a reflex. Toxins from decomposing stomach contents had also been supposed to account for the condition, and a certain peptotoxin had been isolated by the French. The condition was said to be rare, was usually associated with gastric dilation, hypersecretion, and pyloric stenosis. The disease is very fatal, 16 deaths occurring in a series of 27 cases collected by Riegel.

The Pathology of Tetany.—It was to be noticed, Dr. MacCallum said, that the disease occurred in conditions associated with the elaboration of toxins, and there were certain experimental findings which added support to the toxin theory. If, for instance, tetany were artificially produced by extirpation of the parathyroid (*not*, as the books said, of the thyroid), the tetany could then be relieved by removing the animal's blood and replacing

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it with salt solution. Cure, at least temporary, could also be effected by the use of parathyroid emulsion. The tetany following extirpation of the parathyroid was, in brief, a specific form. The patient reported by Dr. Howard had proved at autopsy to have five parts of parathyroid instead of the usual four, and these had shown on section numerous mitotic figures (a rare finding in normal parathyroids), as though the parathyroids had been hypertrophying to neutralize large toxin absorption from the stomach. Dilation of the stomach was enormous, the capacity being 4¾ liters, and the organ reaching to the right iliac fossa. There was great contraction of the pyloric orifice, which measured 5x2 millimeters. Microscopically, the tissue at this point did not show the typical picture of a healed gastric ulcer, but Dr. MacCallum was inclined to think that such had been the origin of the pyloric stenosis. The sudden death which occurred so often during the early history of thyroid surgery had been due, he said, to extirpation of the parathyroids. It had ceased to occur when thyroid-removal ceased to be completely done, and the reason for this had been that the parathyroids were left in. Sudden death, however, associated with features of intoxication and occurring in goiter patients, was difficult to explain. It had been thought to be due to a leakage of colloid material, but experimental work had shown this to be not the case.

Synesthesia.—Dr. H. L. Smith read a paper on this subject, reporting several cases. The word was used, he said, to mean the occurrence of constant and involuntary association of irrelevant subjective symptoms in response to certain stimuli. "Sound feelings," for example, occurred in many normal individuals, the disagreeable shiver when glass is scraped being a familiar instance. "Sight feelings" were also quite common, and the statement had been made that 12.8 per cent. of all persons were normally synesthetic. The association of letters and musical tones with colors was not infrequently seen, and some musicians were said to tune their instruments by color sensations. Number synesthesia was one of the common forms, numbers being conceived of as occupying definite positions in space, usually on a geometrical figure. Statements as to the physiological and pathological nature of this condition varied, but there seemed little doubt that heredity was an important factor in the etiology. The cases reported were all members of the same family, the father, four sons and two daughters being affected. The synesthesia took various forms in the different members, the association of colors with letters, of space position with numbers, of ideas (independent of their meaning) with words being prominent forms in the family. Transmission was plainly from the father, and all the members of the family were of a high grade of mental development. In each case the synesthesia was most intense in youth and faded with the advance of age. Dr. Hurd reported a similar case, the patient being a girl of good intellect, unusual musical talent, but of neurotic temperament. Dr. Thayer reported a case of number synesthesia in which the calendar was always thought of as having a definite geometrical form (an octagon), each date having its own position thereon. In this patient the alphabet was always thought of as a spiral, and there was a definite geometrical scheme for the numbers. No color synesthesia, however, existed.

Hanging-Block Cultivation of Bacteria.—Dr. Ford described Hill's method of growing organisms and observing their morphology during their growth.

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The early discussion as to the nature and classification of bacteria had, he said, obscured their relation to disease, and Koch had been led to propound his famous dictum that the biological nature of organisms was immaterial so long as they were constantly found in association with the same disease process. The recent work of Westbrook and of Hill had, however, thrown a good deal of light on the morphology of bacteria. An organism was shown which had been thought to be one of the simple pigmented bacteria, but which, in hanging block, showed definite mycelial growth.

The Ultra-Violet Rays.—Dr. Ford also reported some experiments he had made on the effect of the ultra-violet rays on bacterial growth. A quartz prism, a cadmium spark, and an agar plate of bacillus prodigiosus were used. Within the ultra-violet rays and reaching to the limit of the violet rays (*i. e.*, including all wave lengths from .00034 to .0002175) baqteriocidal action was evident. Beyond these limits there was none.

Thermophilic Bacteria.—During the sterilization of some blood-serum tubes in Dr. Ford's laboratory at 57° a growth was found to have occurred on the tubes. The organisms were plated and were found to grow only slightly below 40° and rapidly at higher temperatures. They were long, spore-bearing bacilli. Similar organisms have been described by Novy, by the Italians, and by Rabinovitch, who isolated several forms from decomposing manure. The varied forms are all much alike, all bear spores, and do not grow an ordinary media. They cannot be differentiated except by the fact that some do and others do not liquefy gelatin.

BALTIMORE CITY MEDICAL SOCIETY.

SECTION OF MEDICINE AND SURGERY.

MEETING HELD JANUARY 20, 1905.

Pulmonary Stenosis.—Dr. Darling showed the heart of a patient who had died suddenly from violence and hemorrhage. There was stenosis and insufficiency of the pulmonary valve, but no patent foramen ovale or ductus arteriosus. Thickening of the whole heart wall was extreme.

Flint Murmur in Ulcerative Endocarditis.—The murmur described by Flint in 1862 had, Dr. Thayer said, been heard in about 50 per cent. of the cases of pure aortic insufficiency seen at the Johns Hopkins Hospital. It was not, however, common to find it in ulcerative endocarditis. Four such cases he reported, the patients showing symptoms of ulcerative endocarditis with a presystolic murmur, and the autopsy findings revealing no mitral lesions. It was easy to see here that the anterior mitral curtain—practically continuous, as it was, with the aorta—vibrated with aortic regurgitation, and the attachment of the papillary muscle (which arose from the anterior curtain), being just above the apex, might account for the thrill and murmur being most intensely heard at that point. The diagnosis of Flint murmur is by no means easy. If, with aortic insufficiency, a moderate mitral stenosis murmur is heard, but no shock or snapping first sound, suspicion of Flint murmur should be aroused. The pulse, too, did not have the "mitral" characters.

Paroxysmal Tachycardia.—Dr. Gamble reported an obscure heart case.

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The patient had had his attention called to his heart in boyhood by his physician, and had always lived around its beats. Attacks of fluttering with changes in disposition, which varied with the character of the pulse, were the prominent features of the case. The physical signs were variable, signs of myocarditis, with congestion of the liver and edema of the feet, gradually developing. There was no pain, but attacks of apparent angina occurred with fair frequency. At autopsy fibrous myocarditis, sclerosis of the coronaries, and a mural thrombosis of the left ventricle were found. Many diagnoses had been made on this case, and it illustrated the great difficulty of the diagnosis of myocarditis in the early stage. Dr. Thayer emphasized the importance of making patient exercise during the examination of the heart. A murmur which developed under exercise was suspicious.

Malnutrition in Children.—Dr. Killmer of New York read a paper on this subject. The first cause of the condition was, he said, parental ignorance. The healthy conditions with which the parents of present parents had surrounded them in childhood had been forgotten. Breast milk was being superseded by condensed milk and patent foods. Education was begun too early, "higher education" was being overdone, and the great social demands made on mothers were taking them away from their children. The second cause was found in disease of the children. Adenoids and tonsils were familiar examples. Disease of the parents was the third cause. This was most often lues, an old chancre in the father sometimes expressing itself in the child as malnutrition without other symptoms. If other treatment was tried without result, lues should always be suspected, and mercurials and iodides (both borne well by children) should be ordered. In the general treatment good sleeping-room, plenty of fresh air, suitable bedclothing, medium underclothing, plenty of exercise, and a warm bath once a day should be provided. School should not be begun until the seventh year. A daily nap should be taken, and the child should sleep from 6.30 to 7.30. Food should be high in proteids and poor in carbohydrates, and the stomach should be carefully treated. Iron, quinine, sherry, and codliver oil were important drugs for malnutrients. Malnutrition should always be eliminated in the diagnosis of obscure cases. Dr. Ruhräh referred to the fact that comparatively little metabolism work had been done in children, though in infancy and adult age it had been well worked up. Probably in these patients it was not a case of poor absorption from the intestines, but there was some break after assimulation, between that and excretion of end products. A somewhat analogous condition was seen in diabetes. Dr. Mitchell said that the general environment was most important, and, compared with it, adenoids, etc., relatively insignificant. Dr. Killmer said that feeding was overcarefully done up to the end of the first year and after that neglected.

MEETING HELD FEBRUARY 3, 1905.

Pathology of Nephritis.—Dr. MacCallum, in opening a symposium on this subject, referred to the unsatisfactory nature of all classifications. The most classical and fundamental paper since the one of Bright had been Weigert's. The disease is a diffuse, and not a local one, and degeneration rather than inflammation is the essential point. It is due to toxins (probably not usually bacterial), to poisons (alcohol, etc.), to intestinal absorption, to constitutional diseases (gout, lues, etc.), and follows the acute exanthemata and

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pregnancy. Variations in the intensity of the toxins explains variations in symptoms, course, and pathology. All the tissues of the kidney are affected simultaneously in the disease, the degenerative change being the first; then follows a reaction, inflammatory in character. Attempts at regeneration occur, and there is healing, with scar-formation and shrinkage. The interstitial is therefore a secondary form, and the various clinical varieties should be thought of as transitions in a large series.

Acute Nephritis.—Here the kidney is swollen, the capsule fairly normal, the glomeruli prominent, and cortical striations opaque. There is epithelial degeneration, exudate in the tubules, and inflammatory reaction in the glomeruli.

Chronic Nephritis.—No really definite types can here be separated, the various forms grading into one another. Epithelial degeneration is extensive, there is marked infiltration and wandering cells, and there is local scarring. The capsule adheres, and under it are wedge-shaped areas of atrophy separating areas of hypertrophy and active function. This is the typical picture. Other forms differ only in the relative amount of degeneration and scarring.

The Symptoms.—In the acute form, said Dr. Futcher, the onset was abrupt, and there were fever, headache, pain in the back, nausea and vomiting, and prompt edema. The chronic form might often follow, being characterized by pallor, a pasty face, chronic persistent anasarca, high blood-pressure, and the well-known vascular and urinary changes. Many of the interstitial cases were unsuspected, and came to the physician first with severe symptoms. Headache, vertigo, pallor, nausea, vomiting, and high blood-pressure—taken with the urinary changes—make the diagnosis. The symptoms might be grouped as the cardiovascular, the uremic, the respiratory, the sensory, and the urinary. A continued unexplained diarrhea should always make one suspicious of nephritis.

The Urinary Changes.—These were described by Dr. Whitney, nephritis, and not mere albuminuria, being taken as the subject. In the interstitial form the quantity, nearly normal at first, becomes larger and subsequently smaller. In the parenchymatous variety the amount is reduced. Albumen is, in a rough way, inversely proportional in amount to the amount of urine. A decrease of albumen with an increase of urine is approximately a good prognostic sign, but only approximately. It is probable that there is no marked retention of urea over a long period of time, and urea determinations have a very limited value. So, too, of the various methods of functional diagnosis.

The Eye Changes.—The most important early changes were said to be subconjunctival hemorrhages and arteriosclerosis of the retina (the so-called Marcus Gunn vessels).

Book Reviews.

ELEMENTS OF GENERAL RADIOTHERAPY FOR PRACTITIONERS. By Dr. Leopold Freund, Vienna. Translated by G. H. Lancashire, M.D., M.R.C.S., L.R.C.P., Assistant Physician to the Manchester and Salford Hospital for Skin Diseases. New York and London: Redman Company. 1904.

It has been one of the unfortunate but inevitable results of the rapid growth of radiotherapy that it has been necessary to apply radiations em-

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pirically before there was any real practical knowledge of its principles and physiological action. There is therefore much satisfaction in the publication of the scientific labors of Dr. Leopold Freund, who can properly be called the father of radiotherapy.

Radiotherapists can take comfort in the conservative but encouraging estimates of Dr. Freund as to the value of this method of treatment, which has been subject to careful scientific research at his hands for six years. As he says, "This branch of science can hardly be said to be more than in its infancy, gaps in our knowledge being everywhere to be filled and rubbish to be removed." The placing of all such knowledge upon a physiological and biological basis is an unquestionable desideratum, as much of the heterogeneous clinical material accumulated on all sides is without practical value.

The scientific work reported in this book includes numerous experiments on animals and pathogenic organisms as to the ffect of the Roentgen ray, D'Arsonval currents, and radioactive substances, verified by stained sections, cultures, etc., and has added greatly to our elementary knowledge concerning the physiological and vital effects of the various active radiations. The classification of radiations according to the wave-length of their component vibrations is particularly to be commended for its simplicity, and as this gives a useful generalization of the action and properties of all radiations, it is worthy of repetition:

1. The physiological effect of a radiation stands in definite relation to its intensity in inverse proportion to its wave-length (*i. e.*, other things being equal, the short-waved rays cause more powerful and enduring effects than the longer-waved).

2. The signs of reaction only become visible after a latent period, the length of which stands likewise in inverse proportion to the wave-length and intensity of the radiation employed.

3. The physiological effects of the radiation is enduring. As regards the penetrative effect of the radiations we can lay down no absolute rule. It would appear, however, that this also bears direct relation to the wave-length; that is to say, long-waved rays penetrate more deeply than shorter-waved (compare, for instance, blue and ultra-violet).

4. Those rays which have the property of exciting fluorescence (Roentgen rays, ultra-violet rays, blue, and Becquerel rays) appear to exert more physiological effect.

The author considers in separate chapters the *x*-ray, Becquerel ray, phototherapy, and high-frequency currents. As is usual in books of this kind intended for physicians, a chapter is given over to elementary electricity.

The bibliography is remarkably complete and extensive, and refers mainly to standard German works. English, French, and American references are also very full.

Dr. Freund's careful experiments seem to show that the *x*-ray has little bacteriocidal power. On the other hand, the extensive alterations produced in the skin and tissues subjected to radiation from the Crooke's tube seem to be almost wholly due to the *x*-ray (cathodal rays, ultra-violet light,

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and high-tension discharges being excluded by the manipulations employed).

High-frequency currents have a marked destructive action on plate cultures of various organisms, and their effects can be shown to be largely due to sparking and other high-tension discharges, for if the latter are earthed by means of a suitable metallic plate bacteriocidal action becomes practically *nil*.

The marked physiological effects of general autoconduction in the solenoid cage which D'Arsonval and other observers have described have not been noted in Dr. Freund's experiments, but he does not deny that other profound though less striking effects may be produced by this method.

D'Arsonval describes, for instance, a loss of weight in a small guinea-pig of 30 grams in 16 hours when it was exposed to the influence of the oscillating high-frequency discharges in a solenoid cage. The reported increased excretion of urea and carbonic acid and increased reducing power of oxyhemoglobin also lack confirmation by later experiments, as does the reported rise in blood-pressure under autoinduction.

For *x*-ray work Dr. Freund recommends the Rhumkorf coil on account of its adaptability to various methods of work and the large amperage furnished.

To obviate the bad effects of reversal of the current in the Crooke's tube, due to self-induction in the primary coil, a divided primary is used.

Among self-regulating tubes Dr. Freund prefers those acting by osmosis, on account of their simplicity and long life. The non-adjustable tubes he has wholly abandoned.

The suitable diseases for *x*-ray treatment are classified as follows:

1. The so-called diseases of the hair (hypertrichosis).
2. Ulcerative processes in the skin.
3. Acute and chronic exudative dermatitis.
4. Diseases originating in marked changes in the blood-vessels.
5. Progressive disturbances of nutrition in the skin.

Of the action of light, one of its most marked effects seems to be the rapid destruction of bacteria, to which it is applied in concentrated form, the violet and ultra-violet rays having the most decided action. Strong light has been shown to pass completely through the body, although the more refrangible rays, particularly ultra-violet and violet, are arrested in the skin layers.

The most simple, ancient, and well known of phototherapeutic measures is the sun bath. Chromotherapy has been popularized by Finsen's red-light treatment for smallpox. Other methods of concentrated-light treatment described are concentrated sunlight, incandescent bath, Finsen, and other arc lights. The striking results of the latter in the treatment of lupus vulgaris have fairly established the value of the Finsen treatment.

As regards the Becquerel rays produced by radioactive substances, particularly polonium, uranium, radium, and other salts, the most divergent opinions are expressed by competent observers. Some preparations appear therapeutically inactive. On the other hand, severe burns and ulcers have been both accidentally and purposely produced by comparatively short exposures to radium salts, and undoubted and very pronounced effects have been produced upon the growth and nutrition of animals exposed to radioemanations.

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MARYLAND MEDICAL JOURNAL.

JOHN S. FULTON, M.D., *Editor.*

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ROBERT REULING, M.D. | JOSE L. HIRSH, M.D.

BALTIMORE, APRIL, 1905

FROM JEST TO EARNEST.

IN order to escape notoriety one should beware of the pauses in popular chatter. Whoever pipes up during an intermission gets his reward. The easiest way to achieve fame is to watch the newspapers, and at the moment of hiatus set up some unfamiliar twitter.

It was Dr. Osler's fortune, on February 22, to be the central figure in the annual celebration of Johns Hopkins University. The degree of LL.D. was conferred upon him, and he delivered his valedictory to the University in whose service his remarkable powers have developed. It was for Dr. Osler a very great occasion, and he brought to it the very best of his heart's coinage. The message which he delivered was, we may be sure, the sound and wholesome fruit of his experience as a teacher, and ripened for the hour in which it fell. Certain parts of the address excited the press to such an uproar that it seemed to many as if the occasion and the man were not happily met. It was the very irony of Fortune that the parting words of a man so esteemed for kindness and sincerity should have been so wrung from their true and salutary meaning. His main theme was the metabolism of university life, and while considering the very delicate question of the uncertain period of efficiency in a teacher's life, he said that in some young universities whose professors are growing old together the situation can be saved only by "an epidemic, a time limit, or an age limit." His own amiable suggestion was that teachers should be retired at 60 on double pay. He gave his well-known views about the intellectual climacteric which usually occurs in the fifth decade. He alluded more than once to his own tally of years, and the reporters suspected him of joking. When he recalled Donne's account of the deponati, and the humorous suggestion of Trollope, who in a book written at the age of 67 proposed to give sexagenarii a merciful exitus by chloroform, the light-weight intellectuals were persuaded that Dr. Osler was jesting, and they called all the world to witness. So the cheerfulness of his intrepid soul became a contribution to the gayety of nations.

If President Roosevelt, who made an address on the same day, had sounded a new note, Osler's stirring address would not have been caught in the blast. But there was a hiatus in newspaperdom, and Osler's speech set every quill a-flutter. The capricious American public showered upon him all the motley insignia of fame. Cartoonists, paragraphers, prize-fighters, ad-writers, anonymous avengers, and inventors of cocktails bestowed on him marks of esteem. Best of all, solemn editorial writers searched all Scriptures and made an exhaustive catalogue of the worthies

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who have been fruitful of good work after 40, so that Osler must at all hazards now redeem his promise of a book entitled "La Crise de Quarante Ans," for half the necessary rummaging of history was done for him in the week following February 22, 1905.

THE USES OF OLD AGE.

THE address of Dr. Osler was worthy of the occasion, of the audience, and of the speaker. What he said concerning the motives which have led to his removal from Johns Hopkins is as good as anything that Osler has said on any subject. "After years of hard work, at the very time when a man's energies begin to flag, and when he feels the need of more leisure, the conditions and surroundings which have made him what he is, and that have molded his character and abilities into something useful in the community—these very circumstances insure an ever-increasing demand upon them; and when the call of the East comes, which in one form or another is heard by all of us, and which grows louder as we grow older, the call may come like the summons of Elisha, and not alone the plowing of the day, but the work of a life, friends, relatives, even father and mother, are left to take up new work in a new field; or, happier far, if the call comes, as it did to Puran Das in Kipling's story, not to new labors, but to a life 'private, unactive, calm, contemplative.'" This is enough to satisfy best those who most desire that Osler might remain among us.

Every occasion is Osler's opportunity to praise the times gone by, and a considerable part of this stirring address is devoted to a hearty appreciation of the splendid work of organization done by the original trustees of Johns Hopkins Hospital, not one of them now alive, every one of them past the "golden years of plenty" when the work was undertaken. Of course, this portion of the speech was lost in the newspaper snapshot.

Looking squarely at that prospect which all of us must realize who keep our footing on the bridge, who can desire for himself or for another anything better than Osler proposes? Even in the intellectual life most of us are but hewers of wood and drawers of water, and to ask for ourselves relief, before the days of lighter fagots and shallower laden pitchers, is but to plead for the economic use of old age. If one may cease before "the sport is stale and all the wheels run down," one may tell a tale worth hearing, even though one's wagon was never hitched to a star. The uses of old age should be exploited. Its good fruits are of necessity precious, being rare, for the old are but 4 per cent. of all of us. If anywhere, certainly in university life, the uses of old age should be profitable, and here, if anywhere, by exacting of flagging powers a daily round of service, instead of employing such powers on more appropriate and no less precious tasks, the chief value of age is wasted.

THE NOMADIC SPIRIT AND THE HOMING INSTINCT.

IF Osler's idea that the president of a university should "cherish a proper nomadic spirit in his faculties" seems novel, there is no novelty, at least to his friends, in his opinion that a student "should begin his wander-jahre early, not necessarily postponing it until he has taken his M.D. or Ph.D." Similar views, less radical perhaps, pervade the whole faculty of the medical school, and a graduate who leaves that school with a strong prejudice or a mental astigmatism must have brought an incoercible defect into the school. Nor

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do such views tend to weaken either the influence of teachers or the loyalty of alumni. On the contrary, this noble amplitude is the best guaranty of inexhaustible devotedness on the part of both teachers and students. Such breadth of view might make an inspiring teacher of a less man than Osler. In his own case it is, while important, not the chief element of his remarkable influence upon the student body. The compelling force of his character as a teacher is difficult to define, though, happily, easy to illustrate. Among the senior students of 1905, Johns Hopkins Medical School, is a left-over. He has been a left-over often enough to have earned a sobriquet. Class after class has with keen regret gone out without him, and succeeding seniors have claimed him as their own with great joy, for his is a rare spirit to knit men's hearts into fellowship. He may receive his degree with the class of '05, or at all events he must leave the school, and the professor of medicine himself will not carry away any distinction substantially greater than that of the senior student, William Osler. To give himself, without reserve and without condescension, to his pupils, and to be repaid on their part by equal self-surrender—this is Osler's way, and so are physicians made. Athletes are made no better. To be employed "in the work of the hospital as parts of its human machinery, without which the work could not be done efficiently"—this is a vocation which a fit youth cannot resist. To be sure that fruitful effort will not want appreciation, and that the Chief will lose no chance to say, as he says here, that the professors of the University are to be congratulated on nothing more than upon "the sympathy and fellowship with their junior associates, upon whom in many departments, in mine certainly, has fallen the brunt of the work"—such assurance begets a loyalty quite true to its kind.

DR. REED'S REPORT ON THE CANAL COMMISSION.

Dr. C. A. L. Reed of Cincinnati, ex-president of the American Medical Association, stirred up a sensation by his recent report to the Secretary of War on sanitary conditions and prospects at the Isthmus. As the report led to the reorganization of the Canal Commission, it must be considered an effective document, but the character of the report is nevertheless disappointing, and its publication in the *Journal of the American Medical Association* caused general surprise. The Canal Commission no doubt deserved a severe scoring, but not at the hands of Dr. Reed. Having qualified himself under instructions to testify about conditions at Panama, it seems unfortunate that he did not scrupulously maintain the character of a disinterested witness. It was a decided breach of propriety for him to appear at Washington in a dual *rôle* as prosecutor of the Commission and as a mentor to the President. His iterated "more especially Mr. Grunsky" was in bad taste, and his quotations from Mr. Roosevelt's remarks to the Commission at the time of its organization were impertinent. Mr. Taft's comments throw a somewhat palliative light on Dr. Reed's intemperate style. It appears that Dr. Reed's instructions did not relate to the sanitary service. His observations on that subject were made on his own initiative and were elicited by the inquiries of Mr. Taft, who requested him to make his statement in writing, "which he did the same day by the use of a stenographer." In ordinary prudence Dr. Reed should have asked for time to formulate a prudent and dignified report, and every precaution should have been taken to prevent its untimely appearance in print.

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Medical Items.

A LETTER FROM HOME.

Dear Jim: The crops is doing well,
The calf is big enough to sell;
I've traded off the brindle cow,
And we ain't got but one just now.
The hosses all is fat and sleek,
Except that Bob is ruther weak,
But that ain't nothing very queer;
We've had him nigh on twenty year.
I think I'll put the bottom field
In corn and oats; it oughter yield
A heavy crop; the land is rich,
And just the thing for oats and sich.
There ain't no news to speak of, Jim;
Miss Susie Jones is just as trim
As when you saw her in the fall.
The folks is well; I guess that's all—
But stop! I 'most forgot 'bout dad.
I 'xpect the news'll make you sad.
You know that dad was getting old;
Just sixty years had o'er him rolled,
And so, I much regret to say,
We chloroformed poor dad today.
And that is all the news until
I write again.

Your brother,

BILL.

DR. ROBERT GIERING of Baltimore has been fined in the sum of $1000 for a criminal operation.

DR. WIRT A. DUVALL has been appointed assistant surgeon to the Fourth Regiment, Maryland Infantry.

DR. RUFUS I. COLE has been elected medical adviser to the students of Johns Hopkins Medical School.

DR. WM. H. NOBLE has been elected physician-in-chief of the Western Maryland Hospital, Cumberland.

DR. T. CONROY of Mount Savage sustained severe injuries, involving perhaps the loss of his sight, by the explosion of a vial of nitroglycerine.

THE Hood wing of the Frederick City Hospital was opened with appropriate ceremonies on March 7. This addition doubles the capacity of the hospital, and is the gift of Mrs. Margaret S. Hood.

GOVERNOR PARDEE of California has vetoed the bill which repealed the previous act making vaccination a condition of admission to the public schools. An attempt was made to pass the bill over the governor's veto, but the senate supported the veto by a vote of 23 to 3.

THE *Hospital Bulletin of the University of Maryland* is a new medical monthly. The first number bears date of March 15 and presents a good appearance. It is edited and conducted by a committee of the University Hospital staff. The initial number contains four original articles. The subscription price is $1 a year.

DR. C. A. L. REED of Cincinnati has reported to the Secretary of War the results of his recent investigations in the canal zone at the Isthmus of Panama. The report is a scathing denunciation of the present Canal Commission, and it is said that the resignations of all the members will be asked and a new commission be appointed.

THE late Professor Baron of Bonn left a sum of 500,000 marks to the city of Berlin for the purpose of founding an orphanage in which children should be brought up on a strictly vegetarian diet. A condition of the bequest was that no physician should be among the directors of the orphanage. The municipal authorities declined to accept the gift.

THE Appellate Court in Illinois has affirmed the decision of the lower court finding $3000 damages against a surgeon for operating upon a woman without her consent. The decision is that any surgeon who performs a major operation without the consent of the patient is liable to damages, and the liability of the surgeon is not relieved by the consent of the nearest relative.

THE Oppenheimer Institute, which was started a year or two ago under most dignified auspices on an apparently high ethical plane, and without scientific underpinning, has been abandoned by some of its most influential sponsors—Bishop Potter, Rev. Dr. Parkhurst, Rev. Robert Collyer, Hon. Chauncey Depew, Mr. J. D. Kennedy, Rev. Floyd Tomkins. These gentlemen

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have formally withdrawn their endorsement in a published letter.

CEREBRO-SPINAL MENINGITIS is prevalent in New York city and in some parts of Connecticut. Dr. Darlington, president of the Board of Health of New York city, has asked the Board of Estimates for means to organize a commission to investigate the disease. The disease has also appeared in Philadelphia, claiming among its victims Dr. Albert B. Craig, who became infected in the line of professional duty. Dr. Craig was a very promising young surgeon and one of the assistant editors of *American Medicine.*

DR. I. H. GARDINER of Baltimore is under bail in the amount of $10,000, charged with performing a criminal operation on Edna L. Lappe on February 7. The young woman was subsequently attacked by pneumonia and died of that disease on March 3 at the City Hospital. The arrest was made on complaint of the girl's mother, who stated that while critically ill her daughter confessed, in the presence of her mother and a priest, that she had been operated on by Dr. Gardiner. Dr. Gardiner had himself given a history of the case to the hospital physicians, including the statement that he had removed a fetus.

DR. RUSSELL MURDOCH died suddenly at Johns Hopkins Hospital, Baltimore, on Sunday, March 19. Dr. Murdoch suffered an apoplectic stroke just after completing an operation at the Baltimore Eye, Ear and Throat Hospital, and was taken at once to Johns Hopkins Hospital, where he died. Dr. Murdoch was born in Baltimore in 1839. He was educated in the University of Edinburgh, Scotland, leaving there in 1859. He graduated in medicine at the University of Virginia in 1861. He served as a surgeon in the Confederate army from 1862 to 1865. After the war he studied diseases of the eye and ear in Europe. Returning to this country in 1868, he became a lecturer on diseases of the eye and ear at the University of Maryland. Later he became professor of ophthalmology and otology in the Woman's Medical College, Baltimore. He was a founder of the Baltimore, Eye, Ear and Throat Hospital on West Franklin street. Four daughters survive him, one of them a practicing physician, another a student of medicine.

THE Maryland Association for the Prevention and Relief of Tuberculosis had a meeting on March 13 at McCoy Hall, Johns Hopkins University. Dr. Lawrence Flick, director of the Phipps Institute, delivered an address on the value of the hospital and the dispensary in the restriction of tuberculosis. Dr. Henry M. Hurd and Dr. Henry Barton Jacobs also made addresses. A number of popular lectures were given during the month in various parts of the city under the auspices of the association. The committee on lectures, under the chairmanship of Rev. Donald Guthrie, has organized a considerable corps of workers who will receive assignments wherever a local demand is found for such lectures. Of the 10 or 12 lectures given in March, that most largely attended was given by Dr. MacCallum to the congregation of Rev. Mr. Huber. Pastor Huber is deeply interested in the subject and has aroused a like interest in his congregation. The church was full to overflowing on the night of Dr. MacCallum's lecture.

THE State Board of Health has distributed to the physicians of Maryland instructions concerning the registration of tuberculosis. The recent law on the subject makes it incumbent upon physicians attending cases of tuberculosis to advise other members of the household concerning the prophylaxis of the disease. The State Board of Health is required to furnish sputum cups and other necessary supplies, with printed instructions, on the requisition of physicians. The local boards of health act as distributing agents and pass upon the claims of physicians for services rendered under the terms of the act. For delivering the supplies and giving a demonstration of their use, with a written account of the precautions taken and advised, the physician is entitled to a fee of $1.50. Blank forms concerning all necessary inquiries are furnished. These are so worded that they can be answered by one word, "yes" or "no," thus reducing the necessary writing to the smallest practical limits. If a physician does not desire to give the practical instruction required he may call upon the Board of Health to perform that duty. It has been a task of great difficulty to prepare for this work, a very small maximum cost for supplies being necessitated by the appropriation. Such advantages as were anticipated in the purchase of materials in large quantities were not realized when the board went into the market.

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A CASE OF HEMOCHROMATOSIS WITH CHRONIC PARENCHYMATOUS NEPHRITIS.

By Wm. Royal Stokes, M.D., and S. P. Latane, M.D.

ALTHOUGH the deposit of an iron pigment has often been observed in the liver of cases of anemia, yet the term general hemochromatosis is now used to designate a fairly characteristic condition. This condition was reported by Von Recklinghausen[1] in 1889, who described 12 cases, and it consists in the deposit of a brown pigment in various organs of the body. This pigment is derived from the hemoglobin of the blood, and it gives the affected organ a rather bright, reddish-brown appearance.

There are two varieties of pigment, which are distinguished from each other by their distribution in different tissues of the body and by the dissimilarity of their microchemical reactions. One of these deposits is called hemosiderin, and, as its name implies (*Eideros,* iron), it contains iron, and can be demonstrated in the tissues by means of ferrocyanide of potash and dilute hydrochloric acid, which gives the Prussian-blue reaction. This hemosiderin is usually deposited in the cells of the various glands of the body, and in a typical case the granules can be detected in the secreting and other cells of the liver, pancreas, stomach, intestines, and kidney, and in the endothelial cells of veins and capillaries. The second pigment is called hemofuscin, and does not give the characteristic reaction for iron, but when stained by methylene-blue the granules take on a dark-blue stain. This granular deposit is not present in the secreting cells of glands, but is found in the connective-tissue cells of the liver, pancreas, and spleen, and in the muscle cells of the heart, stomach, intestine, and larger blood-vessels.

The cells which contain the iron pigment suffer an alteration in their nutrition, and the nuclei often become small, shriveled, and degenerated. This often leads to a destruction of the cell, and a chronic interstitial inflammation of such organs as the pancreas, liver, and

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kidney is thus established. The increase in the connective tissue of these organs is very characteristic, well-marked cirrhosis of the liver and chronic interstitial pancreatitis being almost always discovered at autopsy. The failure of the lymphatics to eliminate the pigment and the deposit of the hemofuscin in the connective tissue may also cause irritation and consequent increase in the connective tissue of the liver and pancreas.

When chronic interstitial pancreatitis has progressed to a well-developed stage diabetes is apt to occur and to persist until death ends the scene. This complication of diabetes is more characteristic of a disease very similar to hemochromatosis, namely, the bronzed diabetes, or "*diabète bronzé* of the French, accurately described by Hanot in 1882 and by many other Frenchmen later. In addition to the usual lesions of hemochromatosis, the glycosuria is usually a prominent symptom, and the skin shows a diffuse bronzed pigmentation. Both the "iron pigment"* and the "iron free pigment" are found in the tissues.

*The words "iron free" and "iron containing" are used for the sake of convenience, and relate to the positive or negative appearance of the reaction, without strict proof that iron is absent from hemofuscin. According to this criterion, hemoglobin would be "iron free."—*Anschütz.*

Although the cause of this condition is veiled in great obscurity, experiments upon animals have thrown some light upon the subject. Deposit of an iron pigment in the liver has been produced in dogs by the injection of a toxic material called toluyendiamin and by toxic bacterial products which destroy the red-blood corpuscles in large numbers, and the iron-free pigment has been produced in the muscular coat of the intestine by the injection of defibrinated blood into this tissue. It is therefore believed that hemosiderin is derived from hemoglobin, and that hemofuscin is elaborated from hemoglobin by the special action of smooth muscle fibers. The experiments were not carried any further, and diabetes and chronic interstitial inflammation are not mentioned as having been produced. Several observers have noticed granules giving the iron reaction side by side with yellowish granules which fail to react. It has been therefore suggested that the hemofuscin is an end-product of hemosiderin.

In reviewing the clinical and experimental observations on this condition we find the following interesting theory advanced by the majority of writers:

It is thought that, owing to the absorption of some poison or through some other unknown cause, the blood undergoes a profound change. The poisoned and functionless red-blood corpuscles are sorted out by the liver and the cells take up the hemosiderin from the injured corpuscles. Frequently no anemia is present in these cases, and as no great blood destruction takes place, it is probable that the pigmentation is caused by the injured cells not being able to carry on the normal destruction of blood pigment, and it thus accumulates in the parenchymatous cells of the liver and other viscera. The poison itself may also injure the

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cells. The same causes may produce changes in the pancreas. Injury to the parenchymal cells brings about great interstitial increase of connective tissue, and thus the lesions of the disease follow one upon the other. Disease of the pancreas usually causes diabetes.

Anschütz[2] has recently published a case of hemochromatosis with diabetes and bronzing of the skin, and his article also contains a tabulated *résumé* of 23 cases which have been described by other authors. This writer was able to observe his case for about five weeks before death, and the clinical history is briefly as follows:

The patient gave a chronic alcoholic history, and had suffered from several attacks of "jaundice" during the past 13 years. He noticed "a swelling" of the liver seven years before his death. Four months before his death the patient was seized with severe epigastric pains, chills and fever, and passed large quantities of urine. On examination five weeks before his death a diffuse bronzing of the skin was found, together with ascites and edema of the extremities. The liver extended a finger's breadth below the costal margin, the spleen was palpable, and the urine contained a large amount of sugar. This condition continued until death.

At the autopsy the liver was found enlarged, of a brownish-yellow color, and very granular, while the pancreas was mahogany-brown, and many fibrous bands cut up the gland into separate lobules. The other important pathological findings were enlargement of the spleen and brown atrophy of the heart. An anatomical diagnosis was made of general hemochromatosis.

Microscopic examination of the liver and pancreas showed great increase of connective tissue surrounding and compressing the lobules and often separating them into smaller groups of cells. These cells contained a large amount of iron-bearing pigment, while the connective tissue contained iron-free pigment. The bronzing of the skin was due to a deposit of the iron-free pigment in the lowest layers of the rete Malpighii, while the under cutis contained a moderate amount of the hemosiderin. The kidneys and adrenals contained a slight amount of iron pigment, but were otherwise normal.

In analyzing the 24 cases reported in the literature Anschütz found that the disease was only present in men from 30 to 60. Its predisposing cause is given in five cases as alcoholism, in one as lead poisoning, and in one as trauma, but syphilis has never been mentioned heretofore in this connection. Pigmentation of the skin was found in 14 cases, and sugar in the urine was found in every case, although it disappeared at times for a week or more before death. The liver was palpably enlarged in 14 cases, and in 23 cases hypertrophic cirrhosis was found at autopsy. Only one case of atrophic cirrhosis was found. The spleen was usually palpable. The weight of the liver has varied between 1720 and 3500 grams, the normal weight of this organ being about 1500 grams. In 18 cases the pigmentation and interstitial increase in the pancreas was demonstrated by microscopic examination.

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Osler[3] has made a clinical report upon two cases of hemochromatosis with bronzing of the skin without diabetes. One case gave a history of moderate alcoholism and the other a history of repeated attacks of malarial fever. Both cases showed marked enlargement of the liver and spleen. The blood-count of one case showed a normal number of red-blood corpuscles, and the differential-count of the leucocytes gave the usual proportion of the different elements. Janselme[4] and Parmentier[5] also found that, with the exception of a very slight reduction in the number of red-blood corpuscles, the blood was normal. The blood examinations which have been recorded therefore do not show any great appreciable change in this fluid.

A very interesting case of hemochromatosis without diabetes has been recently described by Opie.[6] This case occurred in a white man, aged 55, and it was complicated by typhoid fever, the blood giving the Widal reaction. The skin was bronzed, but no sugar was found in the urine. At the autopsy the intestines showed typhid ulcers, and the liver and pancreas showed a characteristic "deep reddish-brown color resembling iron rust." The liver weighed 2270 grams—nearly twice the normal weight. Cultures showed the presence of the typhoid bacillus.

The histological examination of the organs showed a marked deposit of the iron-containing pigment in the cells of the liver and pancreas, together with a hypertrophic cirrhosis of the liver, and chronic interstitial inflammation of the pancreas. The affected cells of these organs showed degeneration and absence of the nucleus. The heart muscle, lymphatic glands, the endothelial cells and capillaries of the spleen, the epithelium of the stomach, and Brunner's glands, and a few cells of the convoluted tubules of the kidney showed iron-containing granules. The iron-free pigment, or hemofuscin, was found in the connective tissue and walls of the blood-vessels of the liver and pancreas, and in the muscular wall of the intestines, and subcutaneous connective tissue. A slight amount of pigment was also found sparsely distributed in other areas.

Opie considers his case as holding an intermediate position between hemochromatosis and bronzed diabetes, and he concludes by stating that he considers hemochromatosis a distinct disease characterized by the deposit of iron-bearing and iron-free pigments in the tissues. This causes a death of cells and interstitial inflammation, and the disease often ends as a diabetes.

Beattie[7] has recently published a case of hemochromatosis in a man aged 39, who had suffered from diabetes for several years before the skin became bronzed. The autopsy revealed the usual enlargement of the liver, spleen, and pancreas, with the characteristic brown color of the organs from pigmentation. The retroperitoneal celiac glands were also pigmented. On histological examination the usual degeneration of the secreting cells of the liver and pancreas was observed, and the iron-containing and iron-free pigments were found as in the cases mentioned previously. The

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cortical cells of the adrenal gland also contained iron pigment. Beattie also noticed that the peripheral portion of the celiac glands just adjacent to the liver contained hemosiderin. He thinks that this pigment therefore can be transported in part through the lymph by phagocytic cells and deposited in lymphatic glands. He believes, however, that most of it is elaborated in the liver and pancreas. These cells are injured by some unknown toxin, probably of bacterial origin in the intestine. They cannot change the increased or even normal amount of blood pigment which they receive, and it thus accumulates in the protoplasm of the cells as hemosiderin.

He mentions other authors who have reported cases, and could find only 24 in the literature. Our case is therefore the twenty-fifth to be described.

The case which we wish to describe occurred in the University Hospital, and the following history was obtained:

J. H., age 52 years, white, male, married, shipmaster. Patient was brought to the hospital from his vessel in a semicomatose condition, from which he could be roused with difficulty. His coma gradually increased, and he died in an uremic condition without convulsions at the expiration of 48 hours.

There was obtained a scant history extending back some months of gradually-increasing ill-health, with headache and general disinclination for exertion, culminating in anasarca, ascites, and shortness of breath. He had been confined to bed for several days prior to the arrival of his vessel. He had contracted a chancre five months previously, had been on treatment, and was a constant and hard drinker of gin.

Physical Examination.—Short, thick-set man, somewhat cyanotic; breathing is deep, verging on stertor; decided anasarca and some ascites; liver distinctly enlarged, palpable below the costal border; coarse râles heard diffusely over both lungs; hard, indurated scar on penis, and scattered over the skin are the serpiginous lesions of tertiary syphilis. There is enlargement of the superficial lymphatic glands. The urine is albuminous, and contains large numbers of hyaline and granular casts, some bearing epithelial cells. There was a slight elevation of temperature on entrance, which became subnormal before death.

Autopsy.—Body length 170 cm. On inspection there is seen a small scar on the posterior surface of the glans penis; copper-colored, round eruption on arms and thighs. The tissues of the scrotum are edematous, and the abdomen is distended.

Lungs.—On section the lungs are dark red, and a red frothy serum exudes on pressure. The left lung is bound down by fibrous adhesions, which have obliterated the left pleural cavity. The bronchi and pulmonary vessels are normal.

Heart.—Weight 450 grams. The intima of both coronary arteries shows a number of yellowish elevated plaques projecting into the lumen; heart otherwise normal.

Liver.—Weight 3200 grams. The organ is greatly enlarged, and the upper surface is attached to the diaphragm by fibrous

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tissue, which forms a meshwork of firm bands. The lower surface particularly shows a number of interlacing fibrous bands separating areas of brownish liver tissue. On section the liver is light, rusty-brown and coarsely granular, with here and there pinhead-sized light-yellow dots resembling tubercles. The gall-bladder is normal and the ducts are open.

Spleen.—Weight 820 grams. The spleen is greatly enlarged, and shows a few thickened fibrous patches on the capsule. On section the organ is soft, with a great increase of splenic pulp.

Kidneys.—Both organs are increased in size, the cortex measuring 1 cm. in thickness. The cortical markings are exaggerated; combined weight 950 grams.

Aorta.—The intima contains a number of elevated, yellowish plates, and here and there are round, red hemorrhagic areas, which on section only extend through the intima.

Brain.—The ventricles are distended with fluid, but the tissue is otherwise normal in appearance.

Pancreas.—The organ is enlarged, and on section there is an increased amount of fibrous tissue separating the lobules from each other. The organ is very firm, and light brown in color.

The stomach, intestines, bladder, rectum, and testicles normal.

Anatomical Diagnosis.—Syphilitic eruption of skin; scar on glans penis; ascites and dropsy; edema and chronic, passive congestion of lungs; hypertrophic cirrhosis of liver; chronic interstitial pancreatitis; chronic, passive congestion of spleen and kidneys; chronic endarteritis of coronary arteries and aorta.

HISTOLOGICAL EXAMINATION.

Liver (*Hemotoxylin and Eosin Preparations*).—The most conspicuous change in this organ is a great increase of connective tissue. This fibrous-tissue increase is most apparent in the portal spaces, where large bands of tissue separate lobules from each other. The liver lobules are always much smaller than normal, and at times thinner bands of connective tissue derived from the thick perilobular bands divide the lobules into smaller segments or groups of liver-cells. These smaller groups, however, do not always present the normal arrangement of rows of liver-cells separated by thin-walled capillaries. Instead of this normal arrangement, these abnormal subdivisions of the lobule are frequently cut up into large or small groups of cells, separated from each other by bands of connective tissue of varying thickness. At times these groups simply consist of half a dozen liver-cells, but more frequently they consist of a hundred or more cells. A number of the lobules are simply surrounded by thick bands of tissue, and although atrophied, there does not seem to be a distinct invasion of the interior of the lobule by bands of connective tissue. The tissue about the central vein of the lobule did not show any abnormal changes. The capsule of the liver is thickened.

The thick bands of connective tissues, which were mentioned above, at times almost occupy a third of a given field, and they show a well-marked proliferation of the bile ducts. These double

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rows of small cuboidal cells, when viewed under the high power of the microscope, almost present the appearance of a scirrhus carcinoma. The connective tissue contains, in addition, a small number of scattered, elongated connective-tissue cells.

The liver-cells are entirely changed in appearance, and even under the low power seem to consist simply of aggregations of yellowish-brown pigment without nuclei. Under the high power this condition is much more apparent. The nuclei are almost always entirely obscured by a deposit of brownish-yellow granules varying in size from a micrococcus to a red-blood corpuscle, and at times the cells seem simply to consist of fragments of these granules.

When the sections are kept for 24 hours in 10 per cent. sulphuric acid the pigment is dissolved out of the liver cells, and the nuclei are often then seen to be faintly stained. Many of these nuclei seem to have ruptured their membranes, and the dark chromatin granules are scattered through the protoplasm. Many of the cells, especially in the center of compressed lobules, have no nuclei, and the cell is smaller than normal, and some of the nuclei are fragmented. At times large vacuoles can be seen in the protoplasm of the cells. The nuclei of the bile ducts and other cells in the thickened connective tissue present a contrast, taking up a dark-blue normal nuclear stain.

Microchemical Description of the Liver.—On using a 2 per cent. fresh solution of ferrocyanide of potash, allowing this to remain on the section for five minutes and then adding 1 per cent. hydrochloric acid, and mounting in glycerine, the typical Prussian-blue reaction is obtained. All of the granules in the liver-cells turn a light blue, showing them to be hemosiderin particles. The liver-cells simply seem a mass of blue granules, and hardly a cell can be made out in which some pigment cannot be seen. A few of the cells of the bile ducts also contain the blue-pigment granules.

The connective tissue contains a yellow pigment which does not give the Prussian-blue reaction, but when stained by eosin and methylene-blue these granules appear as dark-blue dots in the connective-tissue cells of the fibrous tissue. This is the hemofuscin.

The best method for showing the iron pigment in the liver and the great connective-tissue increase is first to stain by Van Giesen's stain for connective tissue and then apply the ordinary tests for the Prussian-blue reaction. This makes a beautiful contrast, the connective tissue staining a light red, and the groups of liver-cells appearing as dark-blue masses. This stain gave us such good results that we present it in detail.

The section is first stained for 30 minutes in alum hemotoxylin and then washed in water. It is next stained from three to five minutes in a solution consisting of 5 c. c. of a 1 per cent. aqueous solution of acid fuchsin added to 100 c. c. of a saturated aqueous solution of picric acid. The section is washed in water and then placed in 2 per cent. ferrocyanide of potash for five minutes. The 1 per cent. solution of hydrochloric acid is next used until blue areas can be seen in the section. The specimen is then washed in water, dehydrated by 95 per cent. alcohol, and cleared up in oil of

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cloves and mounted in balsam. The manipulation for the Prussian-blue reaction should be done very quickly, as it gradually decolorizes the red stain of the connective tissue.

Pancreas.—There is a well-marked increase of connective tissue separating the lobules from each other, and the lobules are frequently broken up into irregular groups of smaller cell-masses by bands of connective tissue. These groups often number as many as 20 in one lobule, and often consist of a very few pancreatic cells. The connective tissue contains very few cells, but large or small groups of rather fine yellowish-brown pigment are scattered throughout its structure. The pancreatic cells are much more normal in appearance than those of the liver, the nuclei being well preserved, especially after dissolving out the pigment with H_2SO_4. The perinuclear protoplasm often contains a number of fine yellowish-brown granules.

On staining for the Prussian-blue reaction the entire section turns blue as seen by the unaided eye. When viewed under the low power of the microscope the lobules are seen to consist of masses of blue cells, while the connective tissue remains unstained. Under the high power the granules which give the blue reaction for iron are seen to be practically confined to the pancreatic cells, and they are of varying sizes and shapes. In the connective-tissue cells between the lobules there are a number of groups of rather fine yellow granules. These do not take up the stain for iron, but remain a rather light yellow, and are thus easily distinguished from the blue granules in the pancreatic cells. When stained by methylene-blue they take up a dark-blue stain.

Kidney. — This organ shows a well-marked chronic diffuse nephritis of the parenchymatous variety. The majority of the cells in the convoluted tubules of the cortical portion of the kidney are swollen, coarsely granular, and without nuclei. There is also present a slight amount of interstitial thickening of the connective tissue, especially around the glomeruli. The intima of the arteries of the kidney shows slight thickening. The iron-bearing pigment is only present to a slight extent in the kidney, and when properly stained it appears as small blue granules within the protoplasm of the cells of the convoluted tubules and within the endothelial cells of the glomeruli.

Lungs.—The lungs show practically no abnormal changes, but a few endothelial cells, both attached to and free in the air-cells, contain a few granules of iron-bearing pigment. The connective tissue throughout the lung contains a large amount of black-coal pigment, and this fine pigment is also present in the desquamated endothelial cells of the air sacs.

Heart.—The nuclei of the heart muscle are normal, and the muscular fibers contain a few fine granules of hemofuscin.

Spleen.—In places the capsule of the spleen shows marked thickening, and this thickened mass of connective tissue contains a number of elongated, usually spindle-shaped, connective-tissue cells. They consist of masses of dark-yellow pigment which give the iron reaction. The pigment within the spleen is of the iron-

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bearing variety, and is scattered in large amounts throughout the entire tissue. The endothelial-cell lining of the splenic spaces contains most of the pigment granules. The pigment seems confined principally to these cells, and at times aggregations of several cells with nuclei can be made out forming large clumps of pigment. The neutrophilic leucocytes and the lymphocytes, or small round cells, do not contain any pigment, and the Malpighian bodies are also practically free from pigment. No hemofuscin was found in the trabeculae or walls of the blood-vessels.

Aorta.—Sections were made through the thickened plaques of the intima, and these projections were seen to consist of thick fibrous tissue, containing a few irregular connective-tissue cells. Here and there areas of small-cell infiltration, consisting of about 10 cells, are seen, and in a few spots irregular masses of calcareous deposits are present.

Throughout the series of stained sections the hemosiderin is present in greater amount than the hemofuscin.

CONCLUSIONS.

This case of general hemochromatosis, with marked pigmentation of the liver, pancreas, and spleen, together with chronic interstitial inflammation of the liver and pancreas, is of interest for several reasons.

Our case, Opie's case, and Osler's two cases are the only four cases of the 25 which have been studied in which the urine did not contain sugar. Both Opie's and our own case may have been examples of the disappearance of the sugar before death, but Osler's cases were both observed long enough to exclude this error. The sugar in these cases is often intermittent, and in four instances mentioned by Anschütz it disappeared several weeks before death.

It is the only case so far studied in which the definite history of syphilis has been obtained.

Anschütz did not find any mention of grave kidney lesions in his cases, but our case showed a well-marked chronic diffuse nephritis of the parenchymatous variety.

We think it probable that some unknown material causes a change in the blood, and that the liver-cells take up the hemosiderin or altered red-blood corpuscles. The liver and pancreas undergo a secondary interstitial increase of connective tissue, and diabetes often supervenes.

It will take more experimental proof to decide whether the hemofuscin is an end-product of hemosiderin, or whether they are both derived as such from the red-blood corpuscle.

[1] *Tagebl. d. Versamml. deutsch. Naturf. u. Aerzte,* 1889, S. 324.
[2] *Deutsches Archiv für klin. Med.,* Band LXII, S. 411.
[3] *British Medical Journal,* December 9, 1899.
[4] *La Presse Méd.,* No. 11, 1897.
[5] *Semaine Méd.,* S. 60, 1897.
[6] *Journal of Experimental Medicine,* May, 1899.
[7] *Journal of Pathology and Bacteriology,* Vol. IX, 1904, p. 117.

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THE EARLY DIAGNOSIS OF PULMONARY TUBERCULOSIS.

By Wilbur P. Stubbs, M.D.

WHAT is meant by an "early" diagnosis? As to just what constitutes this early stage of tuberculosis there is by no means a uniformity of opinion. Every writer seems to think it his special privilege to divide tuberculosis into as many stages as he may think proper for the presentation of his subject until we have almost as many "stages" as we have so-called "cures."

Some use the term "pretubercular stage," which obviously can have no existence in fact, since everyone must necessarily be in this stage until tuberculous invasion has actually taken place. To describe a pretubercular stage of tuberculosis is to describe the non-tuberculous.

To avoid endless confusion we must of a necessity clearly distinguish between an early tubercular and an early phthisical stage. Everyone afflicted with phthisis must have pulmonary tuberculosis, but it does not follow that every person suffering with pulmonary tuberculosis is phthisal. Tuberculosis *per se* is in no sense a pernicious process; it does not bear the time-honored and respected signs of inflammation. Tuberculosis is caused by the entrance into the system of the tubercle bacillus. Phthisis is tuberculosis plus a mixed infection. Phthisis is tuberculosis plus a septicemia or pyemia. Bacteriologically, phthisis is caused by two or more organisms (one of which is the tubercle bacillus) acting in unison. Hence we see that an early diagnosis of pulmonary tuberculosis is far more difficult than an early diagnosis of phthisis.

The immense importance of an early diagnosis is readily seen. Is it not among the most important of our duties, as physicians, to try and detect the existence of this "great white plague" before a mixed infection sets in and completely changes the prognosis? Trudeau says that 97 per cent. of tubercular patients should be cured, and yet there were nearly 1200 deaths from phthisis last year in Baltimore alone. Where lies the blame? Even yet many of us rely almost entirely on a bacteriological examination of the sputum for our diagnosis, and at the same time we know that the sputum of those tuberculous does not necessarily contain the bacilli, and that it is only after a mixed infection has set in, and softening, caseation, and expectoration have taken place, that we are able to detect bacilli in the sputum.

Trudeau (*Medical News*, June 29, 1901, page 1014) says: "The histories of 70 per cent. of the applicants for admission to the Adirondack Cottage Sanitarium show disease of from one to three

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years' standing." Again he says (*ibid.*): "A man who has acted as examiner for the Adirondack Cottage Sanitarium for years says that not a really incipient case of tuberculosis has ever been referred to him for examination." I quote also from Bowditch's experience at Rutland. He says (*Fifth Annual Report of the Trustees of the Massachusetts State Sanitarium at Rutland*): "The average duration of symptoms of disease prior to entrance in all cases was 15.7 months." While these figures may be somewhat startling to the average general practitioner, it is a sad but not unusual state of affairs for any man who is dealing with tuberculous patients.

Before we can hope or even expect to detect the signs and symptoms incident to a beginning tuberculosis we must possess a thorough knowledge of what the changes are and of what produces them. First, tubercle bacilli must by some means have found an entrance and lodgment in the pulmonary tissues before any phenomena present themselves. Then these phenomena are caused (1) by the presence of these bacilli acting as foreign bodies, (2) by the toxins produced, (3) by the multiplication of the bacilli themselves, and (4) by the increase of local cellular elements. Thus we have the formation of a tubercle, which may terminate either in resolution and recovery, or softening, necrosis and expectoration. It is the detection of this tubercle, before necrosis follows, that should be our aim, and on which ofttimes hangs the life of a patient.

The recurrence of winter colds, with or without bronchitis, loss of appetite, digestive disturbances, malaise, decreased weight, and slight and persistent elevations of temperature (99° to 100°), particularly if accentuated by physical exercise, should invariably excite our suspicion, and a careful and painstaking examination should be made at once. And, I might add, this is only possible when the patient is stripped of all clothing. The best-trained ear is not only immensely handicapped, but ofttimes absolutely incapable of correctly translating the phenomena incident to an incipient tuberculosis through a shirt front or a corset. Surely, if modesty and inconvenience have a place in medicine, it is not here, where so much is at stake.

PERCUSSION.

In this early stage there is little if any evidence attainable by percussion to aid us in our diagnosis. If the crop of tubercles be quite dense, the resonance might be somewhat impaired or the pitch of the note slightly heightened. So seldom is any information elicited by percussion at this stage that we may practically ignore it as an aid in diagnosis.

PALPATION.

The same may be said of palpation as of percussion. The invasion must be very extensive and tubercles close together before

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one can find any increase in vocal fremitus. Anders, however, seems to attach much importance to a lessening of the respiratory excursion. He says (*Journal of the American Medical Association*, January 12, 1901, page 74): "I regard defective expansion at or a little below one apex as profoundly significant, particularly if observed in the infraclavicular space, and in some of my cases 'lagging' was the first, and for a considerable period of time the only recognizable physical sign." In a great majority of cases all palpation signs are absolutely negative.

AUSCULTATION.

Auscultatory phenomena, while very delicate, are, nevertheless, audible to the careful examiner. We may notice interrupted rhythm and a weakened and rough inspiration. An apical catarrh when detected (especially if confined to one side) is quite suspicious of a tubercular process. We may notice a slight sense of moisture, which may even attain a degree of fine crepitation, which is made more pronounced by requesting the patient to cough. If these auscultatory signs are found to persist over any definite area (an apex, for instance) after repeated examinations at intervals, we may accept them as corroborative evidence of tubercular eruption. Before we begin our examination it is to be supposed we have questioned the patient in regard to heredity, environment, habits, occupation, etc. For instance, any occupation associated with impure air and dusty atmosphere renders the lungs less capable of resisting infection. These things are only corroborative, it is true, but, nevertheless, are of value in arriving at a correct diagnosis.

GENERAL SYMPTOMS.

From a pathological condition which produces so few and so slight local signs we cannot expect any marked systemic disturbance. Cough may be entirely absent, or the patient, when questioned closely, may admit a tendency to a slight hack. Again, this may be noticed only after prolonged talking, laughing, etc., or only after an exceptionally deep breath is taken. Again, nothing more than a slight tickling sensation is noticed, or a clearing of the throat when speaking. One may have a slight dyspnea. A more common early symptom is a transient but localized pleuritic stitch, or an indefinite neuralgic ache in the sternal or clavicular regions. The pulse-rate may be slightly accelerated, and blood pressure a little lowered, especially in young persons. The appetite is nearly always capricious, and usually attended with a slight loss in weight. The effects on the nervous system are more or less marked. The patient complains of restlessness, is more or less irritable, tires easily, and cannot walk either as far or as fast as usual without fatigue. As a rule, there is either loss of sleep or sleep is not refreshing, and he awakens tired. Patient has a disinclination to

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work, and his vague symptoms, if noticed at all, are usually attributed by himself as being due to "spring fever" or he thinks he must be "run down." Anemia is usually present, but only in a slight degree. Night-sweats may be present, but to so slight a degree as to be entirely overlooked by the patient unless his attention be called to it.

Harrington has called attention to the dilatation of the pupils as an early sign. He says (*Journal of Tuberculosis,* Vol. II, page 6): "I refer to a widely-dilated state of the pupils; not a paralyzed pupil, but rather one which seems to be in a more or less constant state of dilatation due to some irritation along the track of the nerve fibers in the cilio-spinal region, or perhaps an irritation of the sympathetic, brought about by some blood changes associated with an early tuberculous infection and not yet fully recognized." Obviously, unless this dilatation be very marked, this sign can be of no value unless we are cognizant of the normal state of our patient's pupils.

The thermometer is of great assistance in bringing about an accurate diagnosis at this early stage. It does not suffice to take the temperature probably once a day, but where tuberculosis is suspected we should teach him to take his own temperature every two hours, and we must note particularly the effect of exercise on the temperature. At this early stage the temperature usually rises toward evening from one-half to one degree, and if this is particularly noticeable after exercise we have a most suspicious symptom. The rise is not always constant, but the degree is directly dependent upon the amount of involvement.

TUBERCULIN TEST.

I am a firm believer in the efficacy of the tuberculin test, and believe it should be used in all cases where a probability of tuberculosis exists and is not clearly diagnosed by other means. I not only believe it should be used, but think we are somewhat negligent in not taking advantage of this test when indicated. If given intelligently, the tuberculin test will prove accurate in nearly all cases. The fear of this test, which some practitioners still observe, is based almost entirely upon the unfortunate misuse of the drug as a therapeutic agent when first introduced by Koch. In support of the accuracy and efficiency of this test when properly applied I might quote Otis, Von Ruck, Trudeau, Heron, Osler, Anders, Whittaker, McAll Anderson, Bernheim, and many others. Anders (*Transactions of the American Climatological Association,* 1900) collected 3638 cases in which this test has been used, and says: "It is worthy of note that in not a single series of cases among the many included in the tables which I have prepared is mentioned any ill-effects, and I have not met a single authentic report of a case in which the disease has been disseminated to distant parts of the economy with ensuing acute tuberculosis."

Osler says (*Practice of Medicine*): "During the past few years it has been employed extensively at the Johns Hopkins Hospital,

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both on the medical and surgical sides, with the most satisfactory results, and, so far as I know, without any harmful effects."

THE TEST.

A two-hour chart of the patient's temperature should in all cases be kept for three or four days prior to the injection. It is important that the patient's mode of life should be the same on the day of the injection as on the three or four preceding days when the control chart was being made. As the reaction usually manifests itself from 12 to 16 hours after the test dose, the injection is preferably given either in the early morning or late at night. A one-half of a 1 per cent. solution of the crude tuberculin is made in distilled water, and as an initial dose from one-half to one cubic centimeter of this (which would contain from two and a-half to five milligrams of tuberculin) injected hypodermically into some fleshy part of the body, as the subscapular region. If the patient be tubercular, we will get a positive reaction to the tuberculin, which is indicated by the following signs and symptoms: A distinct rise in temperature (at least two degrees) over the maximum temperature of the preceding day, headache, pain in back and legs, general malaise. loss of appetite, and nausea. If at this time we examine the chest, we will find an increase and exaggeration of all the local signs. If there be any laryngeal tuberculosis, we can readily see the local reaction by laryngeal examination.

If, however, the test is negative, we should wait, say, for two weeks, and repeat the experiment, using a slightly-increased dose. If a patient does not react to 20 milligrams of tuberculin, I think we can say with certainty that he has no living tuberculous tissue present at that time. If, instead of the tuberculin, we use Von Ruck's watery extract of the tubercle bacillus, we may consider the reaction positive with a rise of temperature of less than two degrees, for this reason: "Tuberculin contains glycerine and proteids from the culture fluid, which in themselves can produce fewer of a non-specific character, but the small amount of proteids in a test dose of the watery extract (about one six hundred and fiftieth of a gram) cannot do this except by its specific effect."

It should be remembered in administering this test that a question of great moment is to be decided, and, consequently, we should use any and every precaution within our power to obtain an accurate result.

When we consider the prevalence of pulmonary tuberculosis, the success of early treatment, and the comparative hopelessness of treatment in the advanced stage, we are forced to the conclusion that an early diagnosis of pulmonary tuberculosis is one of the most important subjects in the whole domain of medicine; but before we can expect to make rapid strides in the prevention of this disease, which is annually carrying hundreds of thousands to their graves, we must first become more thorough masters of diagnosis, and in direct proportion as we eliminate the microscope as an aid to this correct diagnosis will we progress along the lines of prophylaxis, prognosis, and treatment.

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Current Literature.

REVIEW IN GENITO-URINARY SURGERY.

Under the Supervision of Hugh H. Young, M.D., of Baltimore, Assisted by J. T. Geraghty, M.D.

CHRONIC PROSTATITIS, WITH SPECIAL REGARD TO ITS OBSCURE SYMPTOMS. Notthafft. *Archiv für Dermat. und Syphilis,* Bd. LXX, Heft. 20.

It has long been known to experienced urologists that chronic prostatitis may give rise to symptoms which do not at all point to the prostate as being the offending organ. This is probably not clearly recognized by the general profession, and even not fully appreciated by many of the textbooks upon the subject. Notthafft reports a number of cases in detail in which sciatica, hemorrhoids, pain in the knee-joint, bladder pain, testicular pain, and even renal calculus were complained of. Many of the patients had been treated over long periods for various ailments and were only relieved by the recognition and treatment of the prostatic trouble. Many cases with obscure symptoms in whom the diagnosis of neurasthenia is made are undoubtedly sufferers from prostatitis, and only by its recognition can alleviation of their condition be expected. He emphasizes the fact that prostatitis cannot always be recognized at the first examination, repeated examinations being sometimes necessary to determine its existence. Out of a series of over 900 cases, in 22 per cent. the only changes demonstrable were those in the prostatic secretion; in 73 per cent. both the secretion and the prostate were changed. The severity of the symptoms produced may not be at all in proportion to the pathological findings. In one patient you may have marked induration and enlargement of the prostate and the secretion almost entirely composed of pus-cells, with none or scarcely any symptoms, while in another, in whom the existence of a prostatitis is only determined by the most careful examination, the symptoms may be of a severe character.

The author has observed over 1500 cases of gonorrhea. Forty per cent. of the cases which had persisted from three months to six months had the prostate involved. Where the duration of the disease was from six months to one year 68 per cent. had a prostatitis; when the disease had persisted over one year, 72 per cent.

This is in accordance with the observation of other authors. The longer the gonorrhea has existed the greater the probability of finding the prostate involved.

The infectiousness of chronic prostatitis, over which the widest difference of opinion exists, was investigated by cultures and micro-

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scopic examinations in 120 cases. The results are very interesting and of great importance. He found that at the end of the first year the gonococcus could be demonstrated in 73 per cent. of the cases, at the end of the second year in only 18 per cent., while if the disease had been present for three years or more no gonococci could be found in the secretion. Other species of bacteria begin to make their appearance after the first six months and eventually dominate the field. No attempt was made to determine the pathogeneity of these secondary invaders, but they undoubtedly play an important *rôle* in keeping up the inflammatory process.

As regards giving consent to marry, Notthafft pursues the following rule: The urethritis must be entirely healed and the prostatitis of at least three years' duration. Furthermore, repeated cultures and microscopic examinations must be negative for gonococci. Of 17 men to whom consent to marry has been given under such conditions no infection of the wife has followed. Pains in the buttocks, back, hypochondrium, testicles, hips, knee-joint, inguinal region, tickling in the urethra, together with precipitate ejaculation, prostatorrhea, and impotence, are some of the more common complaints of the prostatic sufferer.

The author is rather reserved concerning the complete cure of most cases of chronic prostatitis, but the subjective symptoms can be relieved in almost every case. As a rule, they improve much more rapidly than the pathological condition. Vigorous prostatic massage is the therapeutic agent which produces the best results.

* * *

BACTERIAL FINDINGS IN CHRONIC GONORRHEA. Karl Ritter von Hofmann, M.D. (Wien). *Central. für die Krankheiten der Harn- und Sexual-Organe,* Bd. XV, Heft. 11.

The numerous investigations of various workers have demonstrated that the bacterial flora of the normal urethra is extremely rich. The bacteriological results of von Hofmann's investigations in 62 cases of chronic gonorrhea indicate also a rich and various flora. In only one case were the pus shreds found culturally and microscopically negative; in only four cases were gonococci alone found, and in 10 they were found associated with other organs. The gonococci seem to have an inhibitive influence upon other bacteria, as when present in any number in the secretion other bacteria are either absent or present only in small numbers. In 38 cases cocci alone were found, in 16 cases bacilli, and in 27 cases both bacilli and cocci. Two very interesting cases of non-specific urethritis are reported. In one the bacillus Friedländer was repeatedly obtained in pure culture. Fifteen years before the man had contracted gonorrhea, apparently recovered entirely, and afterwards married. Soon after marriage the urethral discharge

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reappeared, and was shortly followed by symptoms of pelvic infection in his wife, who later had to have double salpingectomy performed. Unfortunately, no cultures were taken. This urethritis has been of a most stubborn character, for although he has been under constant treatment for almost three years the urethritis still persists. It is impossible to say in this case whether the urethritis in the beginning was due to the bacillus Friedländer, but that it can produce a urethritis seems undoubted. Moreover, the above case indicates the possibility of a non-gonorrheal urethritis in the male, being infective to the genital organs of the female.

The second case was one in which the colon bacillus was the infecting agent. Soon after the onset a prostatitis developed, followed a few weeks later by an epididymitis. Five months afterwards patient had a well-marked stricture. The majority of cases of non-gonorrheic urethritis are very resistant to therapeutic influence, those due to the colon bacillus being especially prone to early involvement of the prostate and to marked infiltration of the urethra.

With the exception of the above two cases and those in which gonococci were present, the organisms isolated were of a saprophytic type similar to those found in the normal urethra—the clinical appearance very mild in character and the urethral discharge largely composed of epithelial cells. It would seem from the author's results, which are similar to those of other observers, that the gonococcus plays a rather limited *rôle* in chronic urethritis, although the possibility of the urethritis being of a virulent nature, even in the absence of the gonococcus, should be borne in mind.

* * *

AN OPERATION FOR FIXING MOVABLE KIDNEY. A Fullerton. *British Medical Journal*, December, 1904.

The author proposes the following operation for holding the movable kidney in place:

An incision about four inches long is made from a little to the vertebral side of the angle between the last rib and the erector spinae, about a finger's breadth below the rib. The direction is downwards and outwards towards the anterior superior iliac spine. The kidney is exposed, and a horseshoe-shaped flap of capsule separated from the posterior and outer surface, so that the base of the flap is just above the center of the horizontal axis of the kidney. An incision is now made through the strong, thickened lumbar fascia which stretches from the transverse process of the first lumbar vertebrae to the outer end of the last rib. The free end of the separated capsule is drawn through, spread out, and stitched to the ligament. The kidney is thus slung as on a pulley. The operation is easy to perform and fixes the kidney effectually.

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SOME OBSERVATIONS ON THE DIAGNOSIS OF RENAL CALCULUS, WITH SPECIAL REFERENCE TO DIAGNOSIS BY MEANS OF THE *x*-RAY. Alexander B. Johnson, M.D.

Kidney stones consisting of a single ingredient are quite rare, as a rule, several ingredients mixed in varying proportions being found, while in size and shape the greatest diversity exists.

The *x*-rays have demonstrated that a larger proportion of stones than formerly supposed pass out of the pelvis of the kidney and find their way downward to lodge in the intrapelvic portion of the ureter. The subjective symptoms of kidney stone as well as of stone in the ureter consist of pain and disturbances of urination. The typical kidney colic is not always the rule. The pain may be referred in such a manner as to lead to suspicion of disease of different character. Furthermore, there are a number of conditions other than stone affecting the kidney which may give rise to precisely the same train of symptoms. Tuberculosis, new growth into which hemorrhages take place, hemorrhagic pyelitis, kinks in the ureter, etc., may accurately simulate an attack of renal colic.

In some cases the stone may give rise to little or no symptoms at all. The evidences furnished by the urine are valuable, although there are no data to be obtained from the urine which enable us to make a certain diagnosis of kidney stone. In the absence of lesion of the lower genito-urinary tract, the presence of a small quantity of blood, a trace of albumen, a moderate number of leucocytes in the urine is, when combined with attacks of renal pain, in the absence of tubercle bacilli and failure to appreciate a notable enlargement of the kidney on palpation, and especially if there is a previous history of a passage of calculi, strong presumptive evidence of the presence of stone. When infection of the kidney has taken place it is scarcely possible by urinary analysis to say whether the primary cause of the trouble is stone or some originally infectious process.

The opinions of different observers as regards the value of *x*-ray varies to some extent. Johnson draws the following conclusions from his experience. The positive diagnosis of kidney stone by the *x*-ray is reliable and of great practical value. The negative diagnosis of kidney stone by the *x*-ray is reliable and valuable up to a certain limit. If pictures of a proper quality are obtained, calculi of oxalate of lime and phosphates can be excluded. Pure uric-acid calculi cannot. Pictures of a proper quality can be obtained with ease in children and slender adults of both sexes. Such pictures can usually be obtained by repeated trials in well-nourished adults. When patients are unusually stout, when the abdomen is very thick and the buttocks are large, the conditions are extremely difficult, and only occasionally will a satisfactory result be obtainable with the present form of apparatus.

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REVIEW IN NEUROLOGY.

Under the Supervision of Robert Reuling, M.D., Baltimore.

A Case of Locomotor Ataxia With a Tremor Resembling That of Paralysis Agitans. John H. W. Rhein, M.D. *The Journal of the American Medical Association,* Vol. XLIV, No. 8.

The author mentions the fact that of the three cases of involuntary movements in ataxia he reported at the American Medical Association meeting in June, 1902, one case has since died, and the autopsy findings, etc., furnish the subject of this report.

Patient, a man, aged 57; family history good; has always been healthy, had no serious illness whatever, and always been temperate in alcohol and tobacco.

History.—In 1883 he contracted syphilis. The first tabetic symptoms consisted of characteristic pains, from which he suffered for nine years before the other symptoms of the disease appeared. Then he gradually developed numbness of the hands, unsteadiness in walking, and a tremor of the hands. The ataxia increased gradually until February, 1898, when it had become so intense that he could not walk even with assistance.

Examination.—When examined for the first time (May, 1898) he was greatly emaciated. He was unable to stand, and every effort at voluntary movements of the legs produced intense ataxia. There was also marked ataxia of both arms. On the side of the sensory symptoms there were the characteristic changes of locomotor ataxia. The sense was greatly diminished in both legs; he confused heat and cold, and deep pressure was not always recognized. Moreover, he complained of a pronounced pressure sensation over his bladder and intense lightning-like pains in his limbs. There was incontinence of urine, Argyll-Robertson pupil and the optic disks were of a grayish color. The heart and lungs were not conspicuously diseased, and the examination of the urine was negative.

The symptom of special interest in the case was the presence of a fine rhythmical tremor of both hands and arms. The pill-rolling position of the fingers was well illustrated. Voluntary effort temporarily quieted this movement, after which it became more intense. It was absent during sleep and was helped by rest. After muscular effort in one hand the tremor was first quieted and then increased. There were no other symptoms of paralysis agitans. The mask-like face was absent, as well as stiffness of muscles or contractures. The patient died of cerebral hemorrhage.

Autopsy revealed the presence of a large hemorrhage into the right lateral ventricle. The spinal cord, brain, peripheral nerves, muscles, and ganglia were removed and hardened in formalin. The cortex, stained by the Weigert method and by hematoxyglin and acid

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fuchsin, showed no pathologic changes. In the pons the fibers of the pyramidal tract were less distinct than in the lemniscus, which, however, may not be of much importance. The posterior cord columns were intensely degenerated throughout the entire length of the cord, the thoracic and lumbar regions showing the most marked degenerative changes. The posterior roots at all levels showed advanced degeneration, while the anterior roots were intact. In the lumbar region the cells of the anterior horns showed distinct change, and this was also true, though to a less degree, in the cervical region. The cells of Clark's column were well preserved. In one spinal ganglion there was some round-celled infiltration, but apparently no change in the cells. The other tracts of the cord appeared to be intact.

* * *

HAVE DRUG ADDICTIONS A PATHOLOGIC BASIS? Albert E. Eterne, A.M., M.D. *The Journal of the American Medical Association,* Vol. XLIV, No. 8.

The author begins his article with the following remarks: "In studying the pathology of drug addiction it seems to me we have a threefold problem to solve. First, there is an hereditary abnormal aspect—the psychocellular pathology; second, the acquired abnormal conditions of the individual which lead to the use of drug stimulants—the pseudopathology, and third, the effect on the system of the particular drug used—the true pathology of the addiction."

Psychocellular Pathology.—Most authorities deny the influence of heredity among drug habitues. The author holds opposite opinions. First, he claims it is a matter of record in a large percentage of habitues of all kinds that taints of varying degrees are found among the ancestors of these individuals. Very frequently one or both parents or an immediate ancestor had been the victim of chronic nervous or mental affections, or had been addicted to the habitual use of alcohol, morphine or some narcotic. When we consider the especial meaning of heredity it should become apparent that the influence on the individuality and innate characteristics of the nerve cells of the offspring should be distinct.

In the light of modern research we must admit that there is "no such thing as hereditary disease," but it is equally certain that the conditions, characteristics, and environments of the parent all may be conveyed to the fetal cell in a disproportionate degree. True heredity must reach back to the initial fertilization of the male and female cell. After fetal life conditions of environment and education and the development of associations further serve to modify for good or for evil the inherent characteristics of the being. It is a well-known fact that the progeny of chronic invalids, of epileptics or of alcoholists, and mental and moral wrecks develop the tendencies of ancestry in an augmented degree. The same thing can be demonstrated in the peculiarities of the offspring of those addicted to the inordinate use of various drugs.

Pseudopathology.—The occasional causes for the acquirement

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of drug habits are too numerous to classify, but, taken as a whole, they may be subdivided into, first, the use of drugs purely as stimulants, and secondly, their use to efface some physical or mental distress, as worry, grief, or shock. Ultimately the main factor in the causation of all drug habits, whether they be based on hereditary influence, on physical or mental weakness, or on physical or mental pain, is always the same—the weakness of the nerve cell and the lack of vital force, which makes the individual powerless to combat the strenuousness of existence. In one or the other direction the victim seeks to fortify his failing mental or physical power through the aid of a stimulant.

Unless the individual be burdened by extremely strong hereditary taints or be the subject of innate vicious moral principles, and of the lowest or lower grades of intellectuality, there is usually some element of physical weakness in play which he endeavors to overcome by artificial means. It is not at all unusual to find a previous illness has resulted in bodily prostration, not infrequently associated with a greater or less degree of insomnia, to overcome which the patient has recourse to alcohol in some form to sustain the physical vigor and to opium in some form to bring on sleep. It is almost as frequently true that mental or psychic pain has been a source of the drug addiction. To the ever-increasing army of alcoholics and drug-users men and women of the higher social strata are bringing as large, if not even larger number than are recruited from the lower classes. Circumstances too well known make, however, the physician himself the easiest victim of all.

True Pathology.—The users of drugs have been addicted to the habit for a longer or shorter time, during which processes other than those induced by the drug used may have been concurrently at play. To arrive at the true pathology of any addiction, therefore, it would be necessary to exclude all factors other than that of the drug employed. Unfortunately for the solution of this particular problem, few persons die from the effects of the drugs used habitually.

We must therefore confine our inquiry into such pathologic conditions as may be found in individuals who have been habitues for considerable periods of time, and here again we are all confronted with a universal difficulty, for the ultimate effect of chronic use of the common drugs, like alcohol and opium, is that the entire system becomes highly acid. This in itself constitutes a true pathology, and in the author's opinion it is the true pathology. Acidity of the organism, if present for a length of time, induces cellular changes in the various organs. This is as true of the use of opium as of alcohol.

Examples have been frequently found in infants born of mothers who, during the period of gestation, had been using morphine constantly. Such infants differ from healthy children in that they may be inordinately drowsy, refuse to nurse, and have been known to sleep for 24 hours. After the period of somnolence the stupor disappears and these infants show excessive irritability, have colic

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pains, and are liable to become cyanotic. These are the so-called "blue" babies (Happel). The cyanosis is probably due to a lack of closure of the ductus arteriasis and foramen ovale. The careful administration of opium in these cases where development of the child has been irreparably arrested promptly relieves not only the irritability and the colic-like pains, but also the cyanosis, and, moreover, the opium must be administered constantly, and the child must be weaned away from it in the same way as in adult narcotism.

What we know to be the pathologic effect of alcohol is true, though probably in a less degree, of other drugs used in excess. Other authors claim that morphinism and its sister vices are purely diseases of the moral and mental sphere; but it seems to the present author that the former forget the essential power of motility in the brain cells. Therefore it seems that it makes no difference whether we are dealing with a brain cell or motor function, moral function or intellectual function, the same principles must hold good in any or all of these cases. These chronic drug addictions of every kind have a physical basis and a pathological basis in the nerve cell itself. We must not lose sight of the fact that structural changes of the cell, heretofore beyond our limits of vision, are now known to be possible of study by means of intense lateral illumination, which has increased the power of our microscopes many fold.

(*To be continued.*)

* * *

INTRADURAL TUMOR OF THE CERVICAL MENINGES (With Early Restoration in the Cord After Removal of Tumor). Harvey Cushing. *Annals of Surgery*, Vol. XXXVII, No. 5.

The following is a short abstract of the patient's history notes:

Case No. —.—*Intradural Fibrosarcoma of the Spinal Meninges Opposite the Sixth, Seventh, and Eighth Cervical Segments—Laminectomy With Enucleation of Growth and Closure of Wound Without Drainage—Uneventful Convalescence—Rapid and Complete Recovery.*

The patient, L. H., aged 30 years, the son of a Russian immigrant, entered Dr. Osler's service October 14, 1903, complaining of "pain in his shoulder and awkwardness in his gait." Family history: Parents living and well. This portion of history unimportant.

Personal History.—"Has always been healthy." He denies venereal infection, and there is no history suggestive of lues. Moderate in use of tobacco and alcohol and regular in his habits. For 10 years he has worked as clerk in a dry goods house. His usual weight is 132 pounds. Married seven years and has two children living and well. His wife, a delicate woman, has had three miscarriages, one at three and two at seven months.

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Present Illness.—Eighteen months ago, when otherwise in good health, he began to have pain in the flexor portion of the left forearm. It increased in severity, extended into the left shoulder and upper part of back, and often caused loss of sleep. Movements of his neck would cause such pain that he had to be helped out of bed in the morning. On assuming the erect posture and moving about, "limbering up," he could manage to go to work for the day. After a few months the pain became less acute and he was much less incapacitated by it, although he had constantly to guard himself against making any sudden movement of his neck. Almost from the first he has noticed that sneezing, laughing, yawning or coughing would cause pains to shoot from his shoulder into the arm, a symptom which has persisted to the present time.

Early in 1903 a burning sensation appeared in right leg and some weakness of the left leg was noticed. Soon dragging of the left foot was noted. For some time past he has observed a wasting in the muscles of the left hand. He has used it very little on account of pain in that arm, but he has felt no special weakness in this extremity. He also has noticed that changes in surface temperature, as a warm bath or when his feet are in contact with a cold floor, are less easily recognized in the right than the left side. The symptoms became more aggravated and he gave up work. Of late he has been very constipated, and there is some unaccustomed hesitancy in evacuating the contents of his bladder. No disturbance of the sexual functions has been observed.

Blood Examination.—Negative except evidence of a slight anemia; leucocytes 7400.

A tendency to subnormal temperature was more or less constant; on two occasions 96° F.

Neurological Examination.—Left pupil slightly smaller than right; both react to light and accommodation; no vasomotor disturbance about face; no paralysis of any cranial nerves. The patient carries his neck somewhat stiffly and bent forward; no tenderness or deformity of the spine; no muscle spasm; no great limitation of motion. Hyperextension is possible to a considerable degree. Passive flexion of the neck is, however, strongly resisted; examination of pharnyx negative.

No marked Remberg, but patient tires quickly and tremor on slight exertion affects the muscles of the left leg. This leg is awkward in walking; no motor disturbance on the right side of the body. The intrinsic muscles of the left hand, the thenar and hypothenar eminences show wasting. The fingers of this hand barely separate and the grasp is very feeble. Weakness of the extensors and flexors of the fingers and of the flexors of the wrist is also marked. The flexors of the elbow, with supinators and pronators of the forearm and the triceps, are also weak when compared with the sound side. The movements of the shoulder are performed with equal strength on the two sides, though the

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costal portion of the pectoral and latissimus dorsi contract less powerfully on the left than right.

Below the level of supply by the first thoracic segment the entire musculature of the left side of the body seems less strong than on the opposite side. All movements of the lower extremity, especially of the toes and dorsal flexion of the foot, are made only with considerable effort. Comparative measurements in circumference of the arms:

	Right	Left
Upper arm	25 cm.	22½ cm.
Forearm	25 cm.	23 cm.
Hand	21 cm.	20 cm.

The thigh and calf of the left leg are throughout nearly one centimeter smaller in circumference than the right.

Sensory Disturbances.—No difference in tactile sensation either side of the body. Thermic and pain perception was lost over the entire right side of the body from the level of the second intercostal space. An examination three weeks later showed that the thermo-anesthesia had extended to the elbow along the inner surface of the upper arm and later extended to the forearm and hand; no stereognostic disturbance in either hand; muscle sense in extremities apparently normal.

Deep Reflexes.—These are exaggerated at both knees and both ankles, and a clonus is easily elicited, especially on the left side.

In October a tuberculin injection showed no febrile reaction. On October 30 an *x*-ray plate of the cervico-dorsal region showed no abnormality of the spinal vertebra.

Operation, November 19, 1903.—With inflatable pad (Follis' design) under the neck and chest so as to elevate the cervico-dorsal spines, a laminectomy was performed. The spines of the two lower cervical and first thoracic vertebrae were cut away with heavy bone forceps. The laminae were then carefully cut away from the three exposed arches.

On removing the fatty covering of the dura the membrane, about six centimeters of which were exposed, was found to be tense and vascular, with an unusual dilatation of the median posterior vessels. On opening the membrane an abnormal amount of fluid contents was apparent. On opening the arachnoid an oval-shaped growth of a dusky purplish color was exposed. The cord was compressed to the right. The tumor began to extrude itself from the wound and the lower pole was readily freed and tilted upward. The fifth vertebral lamina had to be cut subsequently in order to dissect out the upper portion of the tumor mass, which proved to be an intradural fibrosarcoma. Almost the next day the improvement in motor functions was apparent and the sensory disturbance was correspondingly improved. Altogether the patient made an almost uneventful recovery.

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Society Reports.

BALTIMORE CITY MEDICAL SOCIETY.

SECTION ON NEUROLOGY AND PSYCHIATRY.

MEETING HELD JANUARY 11, 1905.

Dr. Preston dealt with the phychical manifestations of epilepsy. These were, he said, curious in their features and mysterious in their nature. The first question to arise was whether mentality has decreased in the average epileptic. We were all familiar with the fact that many men had had the disease—Mahomet, Caesar, Napoleon, and others—but, as a rule, nevertheless, the mental condition in this disease was below the average; certainly, at least, after the disease had existed for any length of time. Exceptions were seen when the onset of the trouble was late in life or when the attacks were infrequent. The pre-convulsive mental features were, first, the psychic aura—different, of course, from the well-known somatic aura. They were ill-defined, but usually described as a "bad feeling," or "horror," or a "dread." Marked depression for a long period before the attack was also sometimes seen. This might alternate with period of exaltation. Maniacal outbursts, though rare, did occur. The post-epileptic psychic phenomena included, first, a dazed state, which might manifest itself as automatism. A case of this sort was described in which the patient did carpenter work in a perilous position on top of a scaffolding, quite unaware of his actions at the time. The second form of post-epileptic psychic manifestation was the distinct wild mania, virulent in form, furious in expression, and sometimes lasting for months. Melancholia and delusional insanity also occurred, and liability to crime on the part of irresponsible epileptics was a feature that brought the disease into the medico-legal field. Finally, dementia was seen, at least late, in practically all cases. The whole subject of the mental manifestations offered a large field for research in which very little had been accomplished.

Eye-Strain as a Factor in the Causation of Epilepsy.—Dr. Theobald, to whom was referred this aspect of the subject, said: Given an unstable brain with a predisposition to epilepsy, there can be little doubt that in exceptional instances eye-strain may be a determining factor in the causation of the disease. The eye-strain may be the result of a refractive error or of a muscular anomaly, and in producing epileptiform seizure it acts in much the same way that uterine disease, phimosis, the presence of ascarides in the rectum, or of a foreign body in the nose or ear do.

That it is not one of the common results of eye-strain is shown by the fact that Dr. Geo. M. Gould, in reporting 1500 "cases of refraction" (sic), mentions only one case in which epilepsy seemed to be due to eye-strain. Dr. Theobald himself had encountered but one such case. It is not improbable, however, that if cases of epilepsy were as often referred to the oculist as are cases of intractable headache a closer relationship between eye-strain and epilepsy might be found to exist. The coexistence of headache and vertigo with epilepsy points to the not improbable influence of eye-

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strain, and should lead to an examination of the state of refraction and of the ocular muscle-balance. The best results from the relief of eye-strain are to be expected when the relief is obtained at an early stage of the disease.

There has been in some quarters much exaggeration as to the influence exerted by refractive and muscular anomalies in the production of epilepsy, and a considerable number of the cases of epilepsy reported as cured by "graduated" tenotomies or glasses are open to serious question. On the other hand, it cannot be denied that the subject receives less consideration than it deserves in textbooks upon eye diseases.

Dr. Thomas said that he had come back to bromides as the only drug to be used in epilepsy, and had never seen disastrous or permanent ill-effects from their use, though, of course, they disturbed nutrition and caused dullness while being used. The only hope he could see for these patients was their very careful study in institutes and their surgical treatment in every case where there was the slightest chance that it would do any good. In idiopathic and traumatic epilepsy, in epilepsy with focal manifestations, and in epilepsy of birth palsies particularly, surgery offered some hope.

Dr. Hill said that the pathological features of epilepsy about which there was no doubt were an increase in blood pressure and in blood toxicity, a decrease in alkalinity of the blood, and an increased susceptibility on the part of the patient. Treatment might be aimed at any of these features, though drugs given to diminish the blood pressure had availed little. By obtunding the sensibilities we would, of course, prevent or diminish the frequency of the attacks, but the susceptibility of the patient we could not get at, and for this reason we could not cure the disease.

SECTION OF CLINICAL MEDICINE AND SURGERY.

MEETING HELD FEBRUARY 17, 1905.

The Infecting Agent in Gonorrhea.—Dr. Young, in opening a symposium on gonorrhea, spoke first of the history of the subject, referring to the early mention of the disease and of its confusion with syphilis from the fifteenth century until the experimental work of Hunter and Ricord, the pioneer non-identists. Neisser's discovery in 1879, and successful cultures of the organisms by Bumm in 1887, closed the question of the origin of the disease. Columnar epithelium only was at first thought susceptible to gonorrheal invasion, but gradually the organism was isolated from tendons, peritoneum, etc.

When Is Gonorrhea Cured.—This was said to be a question difficult to answer. It could not be settled by the absence of gonococci, but a patient should only be dismissed as marriageable when the urine was free from pus and prostatic and vesicular secretion contained no leucocytes.

Gynecological Aspect.—Dr. Hunner dealt with this phase of the question. Stenosis of the vulva might, he said, be a serious result of the disease. Stricture of the urethra was commoner than supposed, and irritable bladder, with trigonitis, might be due to the gonococcus. Topical treatment of this condition was fairly satisfactory. For the leucorrhea due to cervical infection radial incisions in the cervix with a Pacquelin cautery were useful. Gonorrheal pus tubes were treated expectantly oftener now than formerly.

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Removal sometimes led to infection of the opposite side, and often the remaining pelvic tissues were extremely tender after operation. Sudden onset, rapid progression, and rapid abatement were characteristic of gonorrheal peritonitis. These features, together with its appearance shortly after marriage or near the menstrual period, presence of painful and frequent micturition, and the presence of vaginal discharge would make the diagnosis.

Medical Features.—The organism, Dr. Thayer said, probably did not produce a soluble toxin, but a toxin associated with the bacterial bodies. The disease might be spread by contiguity (ophthalmia, *e. g.*), and metastasis might take place by blood or lymph stream. The inguinal bubo was a good example of the latter, endocarditis of the former. Pericarditis due to gonorrhea has occurred, but endocarditis is by far the commonest cardiac complication. The condition is found in a gonorrheal septicemia, but the actual heart change may be due to a secondary invader for which the gonococcus has prepared the way.

Ophthalmological Features.—The Crede prophylaxis, Dr. Wood said, had reduced the frequency of gonorrhea of the eye from 7½ to ½ per cent. in the Leipsic Hospital, and gonorrheal conjunctivitis was both preventable and curable. Disinfection of the maternal genitalia and simple irrigation of the infant's eyes are used as a routine in the Jefferson Hospital, Philadelphia, and Dr. Wood described the methods of other clinics, detailing the results, and reaching the conclusion that the practice of Standish of Boston (boric irrigation, vaseline on the lids, instillations of protargol or argyrol, and *no wiping*) was as good as any for the treatment of the condition. Cold applications relieved pain in early stages, but did nothing else, and silver nitrate, while quite efficient, was also quite irritating. Dr. Carroll reported a case of true metastatic gonorrheal conjunctivitis, and Dr. Baer referred to several cases of "tender heel" he had recently, due to gonorrheal invasion of the plantar fascia and periosteum, and in some cases causing an exostosis. From the foot of one patient the organism was isolated.

MEETING HELD MARCH 3, 1905.

Symposium on Typhoid Fever.—Dr. Fulton opened the discussion with a paper on the etiology and spread of the disease. The disease was, he said, prevalent throughout this country, as was also the "malarial delusion" which led to so many mistaken mortality returns. Even in communities where malaria does not exist typhoid fever is often so diagnosed. In St. Louis, where an effort was made to have this mistake reduced to a minimum, there was a large increase in the number of typhoid cases, a corresponding decline occurring in the malarial statistics. The morbidity statistics were said to be not improving much, and in the rural districts, where laboratory conveniences were not always available, a good many wrong diagnoses are made. In Maryland many sudoral and many afebrile typhoids are reported. The incidence of typhoid bears a direct ratio to the number of people living at any given age period, and this holds even for advanced years. The mortality from the disease throughout the United States is in the rural districts about two and one-half times that of the cities. In the country milk is one of the most important sources of infection, while the water supply is most important for cities. There are few satisfactory filtration plants, and

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even the best may be impaired by freezing and allow an outbreak, as occurred in Altoona in 1893.

The Prevention of Typhoid.—Dr. Cole began his paper by reading quotations from an article by Budd in the *Lancet* for 1856. This writer recognized the fact that typhoid fever was contagious, gave a good account of an epidemic in Devon, held that all the emanations were infectious, but especially the intestinal, and said that it may be entirely within our power to prevent epidemics by caring for the stools. But, in spite of true views held so long ago, the disease is still quite prevalent, and the reason is that the mortality of the disease is so low. The facts of contagion are similar to those of cholera, but this disease has been stamped out because of its horrible nature. We have, however, become used to typhoid; it does not frighten us, and we expect a few cases. Vaccination and the care of the water supply have been the chief directions which prophylaxis has taken, but the most important thing is to kill the organisms when they leave the patient, who is as much a menace to the community as a scarlet-fever case. The possibility of contact infection must not be overlooked. In certain German communities the disease has been stamped out by the work of Koch along these lines. Milk of lime is not very efficacious for sterilization of the stools. The organisms will grow in it, and, besides, it is soon changed in the air to innocuous calcium carbonate.

The Diagnosis.—Dr. Donovan spoke of the early features of the disease, before the laboratory findings are of much use. A fever, particularly occurring in a young person (especially in August and September), should always be suspected. The chief symptoms were headache, loss of appetite, lack of coincidence of pulse and temperature, languor, pallor, and tremulousness. Epistaxis, bronchitis, and absence of leucocytes were usually seen, but splenic enlargement was not common in the Baltimore cases. Abdominal tenderness, mild typanites, and rose spots would complete the diagnosis.

The Treatment.—Dr. Atkinson said that as the proportion of recoveries increase, confidence in specific remedies decrease. A great majority of cases recover if left alone. Some will die under any treatment. Between these two classes lies the physician's field, and the treatment being adjuvant rather than antagonistic, the first rule is, do no harm.

A trained nurse is always necessary. It is best to underfeed, and we should not depend too much on one form of diet. The general refrigerant treatment should be used. Sponging, if intelligently done, is quite as satisfactory as tubbing. For the tympanitis it is best to change or even withhold the diet, and the latter alternative is to be chosen when vomiting is present. A daily enema usually controls the constipation, but salts of castor oil may be used. The baths control delirium and nervous symptoms, but for insomnia and for coma vigil morphia may be given. Stimulants may be used in the disease, but probably they are not strongly indicated. For a failing heart strychnia, and not digitalis, should be exhibited. Saline infusions are useful if renal insufficiency be present, and are also indicated in profuse hemorrhage, together with applications of ice to the abdomen and hypodermics of ergot.

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THE JOHNS HOPKINS HOSPITAL MEDICAL SOCIETY.

MEETING HELD FEBRUARY 20, 1905.

The Cure of Uterine Cancer.—Dr. John G. Clark of Philadelphia reviewed the recent literature on this subject, drawing conclusions as to operative treatment from the statistical studies which had been published. Radical and complete operation had aroused, Dr. Clark said, bright hopes as to the solution of the problem of the treatment of cervical carcinoma. The ultimate results had, however, been disappointing and led the speaker to take a pessimistic view as to the value of the complete operation. Up to the time of the publication by Dr. Clark of a review of the experience of the Johns Hopkins Hospital with uterine cancer vaginal hysterectomy had been the operation done there, and the results of a series of 48 cases, though as good as in any hospital, were distressingly bad. It was then suggested that the uterus ought to be treated as the breast was, and an attempt was made to adapt the Halsted procedure for breast and axilla to the uterus and pelvis. Experience with this operation had, however, not given the results hoped for, and Dr. Clark did not think that complete dissection of the pelvis offered much for the future. Absolutely complete removal of all the glands was impossible. The prognosis might still be had even if all the glands were removed. A large proportion of patients are quite inoperable when seen at the clinic, and death has usually been from local recurrence. These facts do not warrant one in expecting results in uterine cancer similar to those which have been obtained in breast cancer. The composite experience of various operators has also offered nothing to show that the complete operation accomplishes enough to offset its very much greater primary mortality. Reese, among the early writers, thought metastasis an early phenomenon, and advocated complete glandular removal. Cullen and others said that metastasis to the glands did not take place early, but Wertheim, studying serial sections, found the glands involved in 31.7 per cent. of all cases, and claimed that many metastases had been overlooked by others. Schauta, who advocates radical removal of the growth, and not a prolonged search for metastases, divides the pelvic glands into six groups—the sacral, the iliac, the aortic, the celiac, and the deep and superficial inguinal. Groups 1 and 2 are operable; groups 3 and 4 inoperable, while groups 5 and 6 did not usually enter into the question. Schauta reported 60 cases, with 11 deaths, the prognosis varying totally with the site of the glandular metastases. He found also that the extent of the disease was no criterion at all of the extent of the metastasis, and that the size of glands was of no clinical value in deciding on whether or not they were involved. No one has yet explained why some early uterine carcinomata metastasize, while other late ones do not, nor why certain glands may be skipped by the metastasis, nor why large glands may

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be free from cancer, while small neighboring ones are involved. It is probable that not the gland alone, but also the lymph vessels, veins, and surrounding tissues offer routes for the growth. Kundrath has shown that the growth may take place in several ways—first, by mass-growth from the cervix, usually circumscribed, but in some cases with finger processes; second, association of circumscribed growth with metastases, and third, combinations of first and second. Wertheim, in his 1901 report, said that unless the glands were enlarged they need not be removed. This is now known to be incorrect, but removal of glands, at any rate, is of prognostic, and not of curative value. Dr. Clark's own opinion is that more is lost than gained by an attempt at complete glandular removal—a prolonged procedure with high mortality. While he thought the complete operation ought to be given a good trial by careful and competent men, he did not expect much from it, and personally never did the complete operation, removing all the growth and as much neighboring tissue as possible by means of the cautery (abdominal incision), but making no attempt to get out the glands. Olshausen, who uses vaginal hysterectomy, has reported a series of over 600 cases, 31 per cent. of which were operable, and 18 per cent. well after five years. As to the future, something might be hoped for from the work being done to develop treatment other than surgical. From the operative standpoint the outlook was not bright. It was absolutely necessary to have the diagnosis made early, when the cases could be saved by surgery, and physicians and laity should be educated (as they have been in Germany by the efforts of Winter) to watch all symptoms at the time of the menopause, and always to report promptly uterine hemorrhage.

Pathology of Cervical Cancer.—Dr. Sampson reviewed the pathology of this condition as illustrated by the cases seen at the Johns Hopkins Hospital. In the cervix cancer is more frequent than in the fundus, spreads more rapidly, is attended by a higher mortality and a lower percentage of cures. It is the most frequent form of primary cancer, is a disease of midlife, and is frequent in those who have borne children. It thus takes away valuable members of society when they can least afford to be missed. At present very little is being done by way of surgical cure. Seventy-five per cent. of the cases that come to the clinics are inoperable; recurrence occurs in three-fourths of the cases operated upon, and in practically 93 per cent. of all cases there is simply no cure. Early diagnosis and complete removal of the growth—but not of the glands, which are, when removed, of prognostic value only—offer the only hope of cure, the cases being curable early and operability increasing the earlier the disease is seen. Sixteen of the Hopkins cases are living five years after the operation, and four 10 years after.

Dr. Cullen said that he used Wertheim's operation, and did not dissect out the glands. Dr. Bloodgood said that the problem in uterine cancer was like the problem in cancer elsewhere, and that an extensive local operation should always be done. In the stomach complete glandular removal was attended by so great a mortality, and the chance of recurrence was so great, as not to justify the operation. In the breast the problem was simpler. There was practically no mortality from the operation, and in the Hopkins cases over 45 per cent. have remained cured for three years.

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Book Reviews.

THE ESSENTIALS OF CHEMICAL PHYSIOLOGY. For the Use of Students. By W. D. Halliburton, M.D., F.R.S., F.R.C.P., Professor of Physiology, King's College, London. Fifth edition. Seventy-seven illustrations, 8vo. Price 5s. London: Longsmans, Green & Co., 39 Paternostre Row; New York and Boston.

The importance which chemical physiology has recently assumed has caused it to take a rank fairly to be compared with the principles of animal immunity in its important bearing on the problems of general medicine. It is to chemical physiology as much as to bacteriology and general pathology that the solution of all these important problems must eventually be due.

The book represents the amount of elementary instruction which should be required of all medical undergraduates, but is, unfortunately, seldom made compulsory. To the medical student the book is primarily addressed. It is divided into two main parts—an elementary course and an advanced course. The subject-matter of each part is presented in the form of lessons. The appendix describes the use of the necessary apparatus, and is given over in great extent to the theoretical consideration of the principles of physics bearing on the subject of chemical physiology.

Among the theoretical considerations are the polarization of light, the relation between circular polarization and chemical constitution, solutions, diffusion, dialysis, omosis, Ionic theory of matter, osmotic pressure.

The more important apparatus described are the hemacytometer, hemoglobinometer, polarometer, spectro-polarometer, the mercurial air pump, Waller's apparatus for gas analyses, and Kjeldahl's apparatus for estimating nitrogen.

The work required of the student includes the analysis of the fluids and proximate principles found in the human body, and the properties and modes of separation of closely-allied groups, such as the albumens and globulins.

The chemical constitution of the body tissues and food substances is discussed at some length, and the relation of the chemical formulae to digestion, assimilation, and metabolic processes clearly shown. Among the foodstuffs, the fats and their acetone derivatives, the aldehydes, peptones, mono, di, and polysaccharides; the proteid derivatives, the prosteosis, albumenosis, peptones, and protamines, are particularly worthy of mention. Practical analyses of the compound foodstuffs, such as milk, meat, bread, potatoes, etc., are among the laboratory operations described.

The results of the later analyses of the gastric juice, pancreatic juice, and success entericus are given a prominent place not only because of their intrinsic value to the student in the study of physiological processes, but because of this recently-demonstrated important bearing on certain diseases and pathological conditions.

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As much stress is laid upon the examination of the blood and urine as their importance demands, including the vital chemical phenomena causing blood-clotting, the advanced course takes up the analyses of the more complex proximate principles, and also of some of the more highly differentiated tissues, such as muscle and nerve tissue.

The endeavor has been made to train the student in physiological chemistry in the only practical way—in the laboratory—with a comparatively small expenditure of apparatus and time. The book can be recommended for the use of the medical student in all schools which have realized the importance of an elementary course in physiological chemistry.

RADIOTHERAPY AND PHOTOTHERAPY, INCLUDING RADIUM AND HIGH-FREQUENCY CURRENTS. Medical and Surgical Applications in Diagnosis and Treatment. By Dr. Charles W. Allen, Professor of Dermatology in the New York Post-Graduate Medical School; Consulting Dermatologist at Randall's Island Hospital; Consulting Genito-Urinary Surgeon, City Hospital; Member of American Medical Association, American Dermatological Association, New York Dermatological Society, etc. Octavo, 618 pages, with 131 engravings and 20 plates in colors and monochrome. Cloth, $2.75 net. Philadelphia: Lea Bros. & Co.

This book, unlike Freund's, touches very lightly on theoretical considerations. The elementary physics of electricity are wholly omitted. Only the modes of treatment are considered at length. A large number of clinical histories of cases are given, illustrated by excellent photographs and colored plates. The object of the book, as the author says, "is distinctly practical, to enable the reader to secure for his patient the most prompt and permanent benefit." "As several excellent books are already available upon the practical and technical side of radiography, the subject has been briefly treated in the present volume, and the space thus gained has been devoted to the newer, larger, and more important field of therapy."

The chapter on general medical and surgical diagnosis will be found valuable as a description of the application of the Roentgen ray to the elucidation of obscure and difficult diagnostic problems. Among the medical affections to which this mode of diagnosis is applied may be mentioned plastic and inflammatory conditions of the lungs, effusions into the serous cavities, aneurisms, dilatation and hypertrophy of the heart, esophageal tumors, and strictures. In surgical diagnosis the Roentgen ray is most useful in the examination of fractures and diseases of the bones, foreign bodies, and calculi.

Dr. Allen's experience as to the comparative value of static machines and coils corresponds with that of other radiotherapists, who, since the unsteady character of the ray from the Rhumkorf coil, produced by the induction-spring brake, has been overcome by the electrolytic and motor brakes, are showing a tendency to abandon the static machine in favor of the induction coil.

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Methods of treatment are fully considered. Careful directions are given for posing the patient, and the use of protective screens and masks—all points of importance in producing the desired results.

The chapter on the treatment of carcinoma and sarcoma is particularly lengthy and completely illustrated. For the removal of superficial epitheliomata Roentgen ray shows no superiority in mortality and recurrence to other methods, but its painlessness and the soft, pliable scar produced are in its favor. Dr. Allen recommends the ray in inoperable carcinomata and sarcomata chiefly for the relief of pain and prolongation of life. A few cures are recorded.

The deleterious action of the ray is considered at some length. Cases have been collected by Dr. Allen showing its injurious effects on practically all organs and tissues. Syncope occasionally followed prolonged exposures, and a few deaths have been ascribed to the Roentgen radiations, usually, however, on insufficient evidence.

Dr. Allen makes the first mention we have noted of the probable therapeutic value of the Hewitt mercury-vapor light, a light which has always appeared to us to possess ideal qualities for certain therapeutic uses, inasmuch as it furnishes a powerful light on the ordinary incandescent-lamp circuit, free from heat and the inactive rays of the red end of the spectrum. Dr. Sinclair Tousey of New York has applied the lamp to treatment. The results are as yet unpublished.

The consideration of treatment is practically clear and has given the book deserved popularity since its appearance, compensating to a certain extent for imperfections of English and construction. Like the features of May's sister in George Ade's "Fables," the individual phrases do not seem to understand the value of teamwork. It is distressing to learn that one patient became "nauseous" and another had "positive etiology"—both morbid conditions of gravity, no doubt, which can probably be ascribed like many other indefinite conditions to the pernicious influence of the *x*-ray.

THE PHYSIOLOGICAL FEEDING OF INFANTS. By Eric Pritchard, M.A., M.D. Second edition. Chicago: W. T. Keener & Co.

This work is divided into two parts. The first part deals with the general account of the method of percentage feeding, the modification of milk in accordance with the physiological requirements and the infant's symptoms, and the modification of milk in difficult cases and in special cases; Part II deals with the development and physiology of infancy.

We cannot say that we note anything especially new or anything which has not appeared in the majority of the textbooks on this subject. It is undoubtedly a splendid *résumé* of the present conception of infant feeding, especially of the American system of percentage feeding. The author has kept in mind that every child is a law unto himself, and that food must be adapted to the physiological requirements of the individual baby. The author gives numerous illustrative cases to explain principles. H.

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MARYLAND MEDICAL JOURNAL.

JOHN S. FULTON, M.D., *Editor.*

Associate Editors:

THOMAS R. BROWN, M.D. | HUGH H. YOUNG, M.D.
ROBERT REULING, M.D. | JOSE L. HIRSH, M.D.

BALTIMORE, MAY, 1905

THE LITERATURE OF "PURE FOOD."

IN Chicago on All Fools' Day war broke out in the executive committee of the National Association of State Dairy and Food Departments. The leaders of the opposing factions are Mr. Paul Pierce of Chicago and Mr. R. M. Allen of Kentucky. The resulting division of the Association is said to be deep and bitter. Here's hoping that the strife may reduce both factions to desuetude, for the real merits of the problem may appear when the louder advocates of "pure food" are silenced.

The National Association of State Food and Dairy Departments in the several years of its existence has done little to win and much to alienate the respect of thoughtful hygienists. The published proceedings have not been superior in scientific quality to those of several trade associations, and their style of publication and distribution has been most undignified. It is safe to say that very few librarians, hungry as some of them are for unpriced books, would give shelf room to volumes so padded with advertisements and portraits as are the transactions of this Association. Distributed in bundles of eight to a dozen or more, carriage unpaid, these reports have figured as largely in "Old Hoss" sales as any literature ever put out under official auspices. Mr. R. M. Allen is secretary of the National Association of State Food and Dairy Departments and also, as we have said, chief of one of the contending factions in the Association. Mr. Allen has so much to explain in the past history of the Association that the present contest may afford him some temporary relief. The leader of the other faction, Mr. Paul Pierce, is the publisher of a magazine called *What to Eat*, and was a superintendent of the food exhibit at the Louisiana Purchase Exposition. In his own magazine Mr. Pierce is making frenzied war on certain food adulterations. His title is "The Slaughter of Americans," and one of his papers is especially aimed at Mr. Allen, who is said to have consented to the slaughter

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of Americans. *Public Opinion* is publishing some articles by Mr. Pierce on "America's Food Poisoners."

These two scareheads, mendacious as they are, give no more than a suggestion of the extravagance which they preface. The campaign for honest foods must have been as futile as it is old or a respectable periodical would have rejected Mr. Pierce's manifestly untruthful screed. Not one paragraph of the article will withstand the scrutiny of any well-informed hygienist. In the matter of mere workmanship *Public Opinion* is imposed upon, for Mr. Pierce's contribution is not up to the indifferent standard of *What to Eat*. According to the newspaper accounts, Mr. Pierce brought before the executive committee of the National Association of State Food and Dairy Departments part of his heavy freight of absurd falsehood, and it is most astounding that he should have found among professed and accredited experts an audience ignorant enough to listen for a moment to his atrocious nonsense. Mr. Pierce quoted Dr. John N. Hurty of Indianapolis as having said that of all deaths of infants in this country, 65 per cent. are due to "poisons administered in impure foods and the deadly concoctions placed on the market by fraudulent food manufacturers." From this Mr. Pierce concludes that, since there were 700,000 deaths of infants in 1904, "an army of 455,000 was murdered last year by food adulterators." Without consulting any authority on any of the points involved, one may safely denounce this statement as false *in omnibus*. Dr. Hurty has not said anything capable of being wrested by an intelligent and fair mind to such obliquity. That part of the infant mortality which is due to wilful adulterations of foodstuffs, if demonstrable at all, would be expressed ridiculously in parts per hundred. Seven hundred thousand infants did not die in the United States in 1904. All the deaths under the age of 50 would be fully accounted for within that number. The 455,000 infants said to have been murdered by the food adulterators are a greater number than have died of all causes in the United States in any two years and as great a number as have ever died in a single year under the age of 20 years.

This is a fair sample of Mr. Pierce's championship of "pure-food" reform. Arguments of this sort have been freely used to influence congressional committees in the past two years, and so the good cause has been discredited. The yellow literature of the campaign has silenced many sober advocates of national legislation on food, in so much that some of them neither know nor care whether the bill recently defeated was good or bad.

OTHER HINDRANCES TO FOOD LEGISLATION.

EVENTUALLY the campaign for a national food law will succeed. Faith in the outcome rests upon the absolute merit of the proposition. The only question is as to the more or less remoteness of the result, and this, we believe, is influenced at present more by the weakness of the advocates than

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by the strength of the opponents of food legislation. We have already indicated the more glaring weaknesses of the campaign. There are others, ethically less offensive, but still worth mentioning. The cause has been handicapped from the first by the unveracious slogan "Pure Food." The foremost advocate of federal legislation on the subject, the food chemist of the United States Department of Agriculture, has spent much valuable time in trying to justify his cry for "pure food." Only confusion has resulted. The public needs little or no additional defense against poisonous food, but the need of defense against fraudulent foods is real and urgent. It is perfectly idle to set up as the chief argument for an honest food law the hygienic relations of coloring matters and preservatives. The price of food has its hygienic relations, and the price of food is the crucial point in the agitation for food legislation. The campaign can safely proceed upon the facts that fraudulent misrepresentations of many sorts are exceedingly rife in the food markets, and that State legislation affords the consumer no substantial protection against these frauds. Many States have laws against fraudulent labelling and misbranding, but no State has materially lessened the output of fraudulent foods. One might safely engage to take a congressional committee into any first-rate grocery in Washington, and in five minutes, without the aid of chemistry or the microscope, make an exhibit of fraudulent foodstuffs which comply with the letter of the law in the State where they are manufactured. It would also be possible to show that certain good and wholesome foods cannot be bought in the markets and groceries under their true names and at an honest price, but they can be purchased at an excessive price disguised as foods of different origin and greater cost. In the scramble for food legislation selfish interests have often carried off prizes in the shape of exemptions for themselves or of unjust restrictions upon competitors. The unsophisticated farmer, for instance, puts oleomargarine out of the market by means of a law requiring it to be stained blue, but retains for himself the liberty to stain his butter in the precise shade of yellow demanded by his customers. In the field of national legislation one finds an achievement of like moral quality. The whiskey distillers can now buy of the federal government a little green stamp which, being pasted over the mouth of the bottle, enhances the price and selling quality of the contents on the theory that the government guarantees the goods in each and every package. Bottled-in-bond has been a grand coup for the distillers and has split off an angry faction from the powerful liquor interests. Those who cannot buy the little green stamp believe that they have been treated outrageously, and in a voluminous and widely-distributed literature are telling the long-suspected "Truth about Whiskey," meaning, of course, the very insalubrious spirits under the little green stamp.

A few more concessions of this sort will set all the foes of food legislation at each other's throats, but between an enemy unified by fear of loss and an enemy disrupted over spoils, an unbroken opposition is the easy first choice.

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Medical Items.

THE attendance at all the Faculty meetings was unusually large, as large, apparently, as at the centennial celebration. The three general sessions at McCoy Hall all attracted large audiences.

THE Kings County (N. Y.) Pharmaceutical Society has undertaken to educate the practicing physicians in the art of prescription-writing. They say that the physicians are deficient in this accomplishment.

A COMMITTEE of representative physicians under the chairmanship of Dr. Hugh H. Young addressed a circular-letter to all the physicians in the city asking them to use their personal influence in favor of the sewer loan to be voted on at the municipal election on May 2.

THE osteopaths have succeeded in passing a law in Pennsylvania which exempts them from the examination requirements imposed upon the homeopathists and regulars. They did this by the simple ruse of creating a special examining board consisting of five osteopaths.

THE Governor of Maine became unpleasantly conspicuous recently when the Prohibitionists raided a grocery store in which he was interested and seized a large quantity of a popular patent medicine on the ground that it contained an unlawful amount of alcohol.

THE portrait of Dr. Osler presented by his friends to the Medical and Chirurgical Faculty on April 27 is the work of Mr. Thomas Corner. The Faculty now owns two examples of Mr. Corner's remarkable ability as a portrait painter, the other being that of Dr. George W. Miltenberger.

MISS MARY GARRETT has arranged to have John S. Sargent paint a portrait group of Drs. Wm. H. Welch, Wm. S. Halstead, Wm. Osler, and Howard A. Kelly, four members of the original faculty of Johns Hopkins Medical School. The work will be done in London in June.

IT has been announced in the secular press, and the story has found its way into medical journals, that the State Board of Health of Maryland is engaged in experimental work with a view to producing a preventive or curative serum for cerebrospinal meningitis. The Board desires to state that no such work has been undertaken.

IN the report of the State Board of Medical Examiners to the Medical and Chirurgical Faculty the Faculty was advised to seek new legislation in medical practice. The attention of the Faculty was especially called to the dangerous facility of creating medical schools under the present laws of Maryland. The subject is indeed important and demands radical action.

THE report of the committee on a faculty journal was referred to the council with a recommendation to accept a proposal of the MARYLAND MEDICAL JOURNAL to publish the proceedings of the Faculty and to perform other services to the Faculty. At the time of going to press the details of this arrangement had not been completed.

IN the unusual prevalence of cerebrospinal meningitis in the United States, Maryland has been very slightly involved. One death in Kent county and one in Somerset, with five deaths in Baltimore city, complete the score for the State. One of the victims was a physician, Dr. Townsend, a recent graduate of Vanderbilt University, who died at Princess Anne.

GOVERNOR PENNYPACKER of Pennsylvania has vetoed the bill appropriating $300,000 for two tuberculosis hospitals in the State forestry reservations. Many physicians in the State rather approved the veto on the ground that the State appropriations should first develop existing institutions before creating new ones. The White Haven Sanatorium received an appropriation of $100,000.

DR. ALBERT K. HADELL died at his home in Baltimore on April 4, aged 54. Dr. Hadell graduated at the University of Maryland in 1889, and practiced in Baltimore since that time. During the administration of Mayor Malster he was secretary of the City Board of Health. He was an ardent student of American history, and a president of the Maryland Society of the Sons of the American Revolution and of the Maryland Society of the War of 1812.

THE Maryland Association for the Prevention and Relief of Tuberculosis has been carrying on its campaign of popular education very actively during the past two months by means of popular lectures in various parts of Balti-

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more city. The two largest audiences so far reported were one which Pastor Huber assembled to hear Dr. McCallum, and an audience of school teachers which completely filled the Associate Reformed Church to hear Dr. Wm. H. Welch.

THE National Association for the Study and Prevention of Tuberculosis will hold its first annual meeting in Washington on May 18 and 19. On the morning of the 18th addresses will be made by the vice-presidents, Dr. Wm. Osler and Dr. Herman Biggs. At the general meeting on the evening of the 18th there will be an address by Mr. Talcott Williams of Philadelphia. The section meetings will be held on the afternoon of the 18th and on the morning and evening of the 19th. There are three sections—the Sociological, the Clinical and Climatological, and the Bacteriological and Pathological.

AFTER an absence of nine months smallpox has appeared in Maryland. One case is reported near Cumberland, a man who came from West Virginia while sick. In Hagerstown a small outbreak was discovered on April 21. Three cases were found, and investigation revealed six or seven convalescents from a very mild type of the disease. The infection was brought to Hagerstown by a young cigarmaker who had been at work in Richmond. He arrived in Baltimore about March 1, and becoming sick, went to his home in Hagerstown on March 4, where he gave rise to the present small outbreak. There is no reason to fear its further spread in Hagerstown.

THE Federation of Women's Clubs' meeting in Baltimore in the second week of April passed vigorous resolutions favoring the registration of tuberculosis and the disinfection of houses, commending the campaign of popular education by the Maryland Association for the Prevention and Relief of Tuberculosis, the Tuberculosis Commission in its efforts to provide sanatoria and dispensaries for tuberculosis, and the Instructive Visiting Nurses' Association in their house visiting, and urged the component clubs of the Federation to extend their influence to create a public sentiment in their localities in favor of the crusade against tuberculosis.

THE one hundred and seventh annual meeting of the Medical and Chirurgical Faculty of Maryland was held in Baltimore on April 25, 26, 27, and 28. The first general meeting was held on Tuesday evening at McCoy Hall, Johns Hopkins University, when the president, Dr. Edward N. Brush, made his address on "The Physician as a Citizen." The Wednesday morning session was held in the Faculty Hall. Papers were read as follows: "Malignant Disease Developing in or Accompanying Uterine Myomata," Dr. T. S. Cullen; "Review of the Deaths Due to Cancer During the Past Fourteen Years," Dr. C. Hampson Jones; "A Severe Case of Tetanus Successfully Treated With Antitoxin," Dr. Charles F. Davidson; "Some Remarks on the Recent Diet Cures in the Treatment of Diabetes," Drs. Julius Friedenwald and John Rurāh; "Empyema of Frontal Sinus—Exhibition of Patient," Dr. R. H. Johnston; "Gastric Conditions in Urticaria," Dr. L. K. Hirshberg. The afternoon session was held at the Sheppard and Enoch Pratt Hospital, where the members of the Faculty were the guests of their president, Dr. E. N. Brush. Dr. Simon Baruch of New York made an address on "The Physiologic Basis and Clinical Effects of Hydrotherapy in Chronic Disorders," after which the new hydrotherapeutic department of the Sheppard and Enoch Pratt Hospital was inspected. The Wednesday evening session was held at McCoy Hall at 8.30 P. M., when there was an address by Dr. Clarence J. Blake, professor of otology, Harvard University, on "Collaboration in Medical Education." After this was a symposium on the "Benefits Conferred Upon Humanity by Medical Science," divided as follows: "Preventive Medicine," Dr. Wm. H. Welch; "Modern Therapeutics," Dr. I. E. Atkinson; "The Debt This Generation Owes to Surgery," Dr. Robert W. Johnson. On Thursday, April 27, at the morning session, there was a symposium on the "Newer Methods of Clinical Investigation," divided as follows: "Improved Chemical Methods in the Clinical Laboratory," Dr. E. L. Whitney; "Blood-Pressure Observations for the Practicing Physician," Dr. Clinton E. Brush; "Leucocytosis," Dr. Thomas R. Brown; "Cytodiagnosis in Psychiatry," Dr. Clarence B. Farrar. Dr. Samuel Theobald read a paper on "The Success Which at the Present Day Attends the Operation of Cataract Extraction and the Causes Which Contribute to It." The Thursday afternoon session was held at McCoy Hall at 4.30, when Dr. Wm. Osler delivered the annual oration, entitled "Unity, Peace, and Concord." After this came the presentation to the Faculty of the portrait of Dr. Osler. The presentation address was made by Dr. George J. Preston. The annual banquet was held on Thursday evening at the Stafford Hotel.

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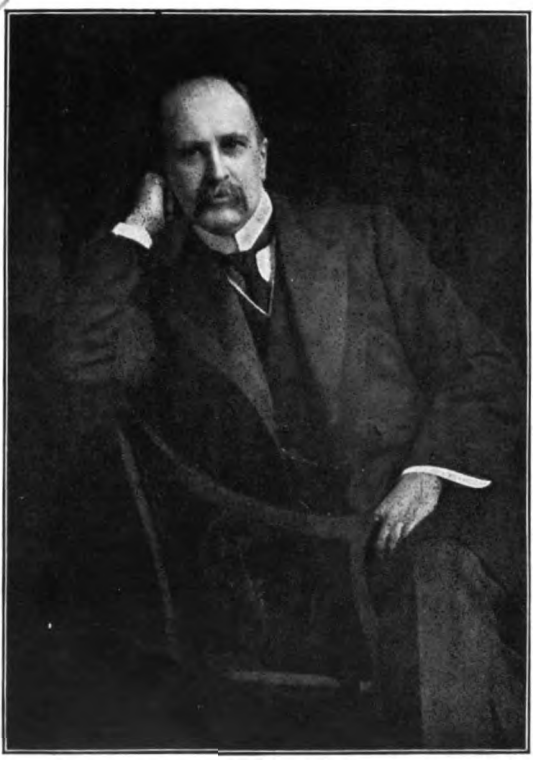

WILLIAM OSLER, M.D., LL.D., F.R.S.

(From a **Recent Photograph.**)

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THE PHYSICIAN AS A CITIZEN.

By Edward N. Brush, M.D.,

Physician-in-Chief and Superintendent, Sheppard and Enoch Pratt Hospital, Towson, Md.

PRESIDENT'S ANNUAL ADDRESS AT THE ONE HUNDRED AND SEVENTH ANNUAL MEETING OF THE MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND, BALTIMORE, APRIL 25, 1905.

Fellow-Members of the Medical and Chirurgical Faculty:

The written law of the Faculty, as well as "tyrant custom," makes it incumbent upon the retiring president to deliver an annual address.

This duty stares the occupant of the high office, to which your partiality has called me, in the face during the entire period of his official life. The knowledge of it sits down beside him at his morning, midday, and evening meals, and follows him through all the hours of the day, be they busy or not, and as his brain courts the slumber that is sometimes tardy in coming, he starts from his pillow, thoroughly aroused by the recollection of that still unwritten address.

There are betwixt his induction into office and the delivery of that dread address "more pangs and fears than war or women have."

Some weeks since I listened with delight to a most eloquent speech at the dinner of the New England Society of Pennsylvania, and, as the speaker let fall the remark that to prepare himself for the occasion he had read all the after-dinner speeches before the Society for a series of years, having my duty ever before my mind, I thought: There at last is an idea. I shall follow his example and possibly gain, as he seems to have done, an inspiration. I will read the annual addresses of my predecessors.

Inspiration I did gain. Suggestive ideas in trooping multitude passed before me as I read on and on, but, alas! how could I use them and present again to you in my feeble way what has been so well and so eloquently said to you by the illustrious men who have filled this chair.

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What am I that I should presume to give assent to their views or repeat their words but one "crying in the night and with no language but a cry?"

Permit me primarily to welcome you to the deliberations of the one hundred and seventh annual session of this ancient and honorable Faculty. The year that closes with this session has been an eventful one in its history. We have been working under a new organic law or constitution, with enlarged views of the character of our organization and the scope and purpose of its work.

The attempt has been made, with a fair degree of success, to interest every qualified regular practitioner in the State in the local medical society of his county or district, and through it in the central or parent society, the Medical and Chirurgical Faculty.

Local societies have been formed or were, at the time of the adoption of the amended constitution, in existence in Baltimore and in every county, and many of them are doing active and valuable work for the profession and the community.

One of your most honored presiding officers, addressing you as I do this evening, said, "No class needs friction so much as physicians; no class gets less."

The busy practitioner absorbed in his daily round of duties, or the young man just from his school and hospital tutelage, is too apt to be so thoroughly absorbed in his own cares or the ills and worries of his patients, or in better preparing himself to share or alleviate their burdens, that he becomes unconsciously narrow and self-centered. To cure this, to tone down some of the egotism which all of us possess to a greater or less degree, there is nothing of greater value than frequent meetings with fellow-physicians and the free and unrestrained discussion of each other's views. Moreover, too great isolation begets brooding and suspiciousness, and out of these grow jealousies and bickerings which too often, alas! have marred the relations of professional men with each other. Not only do these unfortunate conditions result, but the physician who becomes thus self-centered loses sight of those broader interests in the advancement of which there is no man in his community, be it some simple country hamlet or populous city, who should and could wield a greater influence and one more intelligently directed for the good of the people.

The value which will flow from these organized associations of physicians all over the State cannot be estimated.

It will take some patience, much forbearance, and self-sacrifice on the part of the members, particularly in the less-thickly populated parts of the State, to maintain these organizations and give them vitality and force.

The selection of an active, persistent man as secretary will go far toward accomplishing the task. He should be supported by an active committee to arrange for places of meeting, papers and topics for discussion, and he and this committee should see to it that for every meeting an attractive and instructive program is prepared, and that those on the program are on hand. Nothing

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more quickly kills a medical society than meetings with no definite work to do.

The Council of the State Faculty has prepared a list of names of several gentlemen, accustomed to didactic or clinical instruction by reason of holding college or hospital appointments, who will gladly attend meetings of county societies and present papers or open discussions upon topics connected with medicine or surgery. The secretaries of county organizations can always obtain speakers from the list by applying to the secretary of the Faculty.

Too much dependence should not, however, be placed upon outside aid. The problems of the local practitioner and of the community in which he lives are the ones which need discussion and upon which the interchange of views is of most value to the members of local organizations. Moreover, the very habit of talking before one's fellows upon scientific or social topics serves to clarify one's ideas, and is of itself, therefore, of no mean value. The makeshifts and expedients to which a country practitioner must resort, far removed from the convenient accident or emergency ward of a hospital or from some fellow-physician for whose aid he sorely longs, deprived of access to the corner drug store or the instrumentmaker's shop, are many and ingenious, and the city doctor who attends the meetings of the county society, hoping to instruct his fellows in some new therapeutic or surgical procedure, will often come home with a broadened medical horizon.

I have seen the femoral artery skillfully taken up and tied, the patient lying on some boards torn from a nearby fence, with instruments from a very poorly-supplied pocket-case, and, lacking a better instrument, the thread drawn under the artery by a looped and bent hairpin, the whole operation performed by the light of two or three railroad lanterns and in the open air. The surgical technique would shock a modern surgeon, but we had fresh country air, plenty of clear spring water, and our patient lives, or did a few years ago, a tribute to the skill, coolness and ready adaptability to circumstances of the country doctor.

Not only will these county organizations be of value to the local doctors and the communities in which they live, but to the whole body of practitioners throughout the State, because they will knit together for public and professional good all the physicians of the State. I predict that the time will come, and come soon I believe, when no qualified and registered physician can afford to be outside his local medical society, when the public will look upon such a man with suspicion, doubting his progressiveness and his interest in professional and civic advancement.

Among doctors it has too often been said with truth, as I have intimated, that jealousies and disagreements are rife, and this is especially true, and I say it with no reflection upon them, but with the highest appreciation of their personal and professional worth among rural practitioners. The city doctors who meet each other frequently, either socially, in consultation or in the halls of their city society, show less of this. Opportunity for explanation of

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misunderstanding is afforded by social and professional contact. Better acquaintance begets truer appreciation of each other's good points, and so it will be among the members of the county societies. Dr. A will see that Dr. B is not what some local gossip has painted him, and getting to know him for what he really is, will realize that the deeds or words which have been ascribed to him could not justly have been laid at his door.

Not only will this occur, but the society performing its other, and by no means less important, mission, the education of the public, will do more to stamp our irregular and quackish practitioners than all the repressive laws upon the statute books ever have done or ever will do.

The unqualified and unregistered advertising quack will find a barren and unproductive field to cultivate, and the man who follows, or pretends to follow—for in most cases it is mere pretense—some exclusive medical dogma will in time learn, if he has had anything approaching a proper medical training, that he is handicapped in a manner wholly unknown to the regular physician. By his profession, if he is honest, he is limited to certain drugs or certain dosage based upon a theory, while his neighbor, avowedly seeking the truth, persistently searching for that which shall satisfy the requirements of his patients and the demands of advancing science, can and does take advantage of any remedy or procedure which wisdom and experience approves.

In time, therefore, the honest practitioners of exclusive methods in medicine will drop their exclusive title and apply for admission to the ranks of regular medicine. When such applications are made, if the evidence goes to show that the applicants propose in the future to practice in accordance with the best teachings of science and experience and to drop all claim to exclusive knowledge or success, the applicants should be received and given a helping hand and cordial support and sympathy.

The benefits which will accrue to the members of the county societies are not, however, by any means confined to those resulting from an opportunity to exchange views or to meet in social intercourse. If the plans which are now under consideration are adopted, and I do not see anything to stand in the way, each member will receive a monthly medical periodical* published by the parent or central organization, the Medical and Chirurgical Faculty, containing the papers read at its annual and semiannual meetings, and the proceedings of the various component societies, the Baltimore City Medical Society and the county medical societies. Not only is it expected that this can be done without additional cost to the members, but other arrangements are in contemplation which will be greatly to the advantage of every member of the component societies.

The work of the year just closing at the home of the Faculty on Eutaw street has more than ever before demonstrated, if additional demonstration were necessary, the absolute need of enlarged quarters, of better accommodation for the large number of readers, annually increasing, who seek the use of our library, and of better,

*This prospect has been realized in the adoption of the MARYLAND MEDICAL JOURNAL as the medium of publication for the Medical and Chirurgical Faculty. This arrangement goes into effect in July.

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more commodious and safer housing for our valuable and growing collection of books and periodicals.

In 1896 our library numbered 7500 bound volumes, to say nothing of pamphlets and unbound periodicals; at present we have on our shelves 14,590 bound volumes, with a large increase in pamphlets and periodicals. In 1903 the readers consulting the library numbered 4501; in 1904 they numbered 5113. The collection of books owned by the Faculty is of great value, and under the direction of efficient and active library committees and the care of a trained librarian has been arranged and catalogued so as to make it available to the members of the Faculty in the best manner possible under present conditions.

The recent infusion of vigor into the library, its development, and its growing usefulness to the profession of Baltimore and the State is largely, however, due to one man. In season and out of season, at home and abroad, his thoughts and his work have been for our library and its development into a center of medical thought and medical work.

Few outside of the library committees of the past 15 years have known how much in time, in energy, in valuable books, and in resources to purchase others have been contributed for our benefit, fellow-members of the Faculty, by this one member, your former honored president, Dr. Osler. I doubt, indeed, if anyone knows or will ever know the debt this Faculty owes to him in this respect alone. This debt, however, is not one which the Faculty alone owes. Every new book, every periodical, home or foreign, added to that library has been in some way, directly or indirectly, a benefit, and a benefit whose value cannot be measured by money values to the citizens of this community and State. The annually increasing number of readers visiting the library shows the growing appreciation in which it is held by the members of the Faculty. Books and periodicals are there found which many practitioners find it impossible to own, and yet every member of this ancient medical body has, by reason of its library, opportunity to consult them. What results? The most recent teachings of scientific men the world over are placed at the disposal, citizens of Baltimore and Maryland, of your family physicians. Not a laboratory, not a clinic, not a hospital but contributes in research or in the practical application of newly-devised methods, in the prevention or cure of disease or the alleviation of suffering, to your preservation from the "pestilence that walketh in darkness" and from "the destruction that wasteth at noonday."

The purposes for which this Faculty is organized, as stated in its constitution, are:

"To federate and bring into one compact organization the entire medical profession of the State of Maryland; * * * to extend medical knowledge and advance medical science; to elevate the standard of medical education, and to secure the enactment and enforcement of just medical laws; to promote friendly intercourse among physicians; * * * and to enlighten and direct public opinion so that the profession shall become more capable and hon-

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orable within itself and more useful to the public in the prevention and cure of disease and in prolonging and adding comfort to life."

Such a statement of purposes involves on the part of those subscribing to the constitution, by reason of membership in the organization of which it is the organic law, the exercise of some of the highest duties of citizenship. To seek "to enlighten and direct public opinion" to the end that disease may be prevented and life prolonged and made more comfortable implies a scheme of public philanthropy which embraces everything in the daily lives of our fellow-citizens, and has relation to everything which influences those lives for good or evil.

It has occurred to me that some remarks, therefore, upon the duties of the members of this Faculty as citizens or upon "The Physician as a Citizen," as appears upon your printed program, might in some small degree, if they did not enlighten, at least direct the thoughts of the profession and the public toward matters of more or less importance in our civic life.

If in attempting what I confess, as I approach it, appears a stupendous task, by reason of the many and intricate matters in our laws and political organization and methods, which should appeal to the thoughtful physician and upon which his advice might, with advantage, be sought by those who make and execute our laws, I sometimes wander from my subject as it has been announced and dwell more upon the *matters* of which the physician as a citizen should take cognizance than upon the *manner* in which he can make his influence and knowledge felt, you will, I trust, excuse the digression. It is often much easier to point out heights to be scaled than to either lead the way or even make a map of the most direct or feasible path.

Some time ago reading at random a page here and there of the "Laws of Plato" the subject of my address was suggested to me, and those in this audience who have found not only delight and relaxation, but instruction as well in following Jowett's most excellent translation will, I am sure, recognize in more instances than I shall perhaps be just and careful enough to acknowledge in my manuscript, my debt to the Greek philosopher.

We are citizens of no mean State or city, but there are few of us I imagine who have not seen, who do not daily see, conditions or know of methods in public affairs, in the making or administration of our laws, which do not tend either to prolong life or make it more comfortable.

Physicians, as a rule, governed in some instances by a fear that in attempting to "enlighten and direct public opinion" they may lay themselves open to the suspicion of attempting self-advertising, or by a distrust of their abilities to guide public opinion, are not inclined to mix in public affairs. Matters upon which they, and they of all men, should speak are ignored to the detriment of the body politic, to the disgrace of the profession.

In the system of laws to which I have referred one reads, "Worthy of honor is he who does no injustice, and of more than twofold honor if he not only does no injustice himself, but hinders others

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from doing any. The first may count as one man; the second is worth many men, because he informs the rulers of the injustice of others. And yet more highly to be esteemed is he who co-operates with the rulers in correcting the citizens as far as he can" ("Dialogues of Plato," Jowett's translation, Vol. V, Laws V, p. 112). In the lines quoted injustice may be taken to mean any act or method of living which may be harmful to the other citizens, either directly or by reason of the influence of the act upon the person himself. The Athenian in these dialogues would "regulate our cities and houses according to law, meaning," he says, "by the very term law the distribution of mind," and asserts that these statutes "fulfil the object of laws, which is to make those who use them happy." The "best existence," from which happiness naturally flows, is declared to be the greatest political good of individuals and States. This best existence does not consist for the city or State in great power or wealth or extensive trade, but in the conservation, by wise laws, well executed, of the best interests of the citizens.

The laws of Plato's republic, seeking to accomplish these objects naturally, sought not only the welfare of those already in existence, but, looking to the future, proposed to so regulate marriage that future generations should suffer as little as possible from transmission of the evil traits and tendencies of their progenitors; should inherit as much as possible of the good.

The rules laid down were of necessity Utopian, but are none the less suggestive. Few physicians in my audience of any length of practice but have been asked to advise in some doubtful case as to the wisdom of a contemplated marriage; few when their advice was against the proposed union have seen their advice followed. In how many more instances have they known of marriages which were, viewed from the medical standpoint, crimes against the race, and yet the doctor, with all the aspirations of a good citizen, with his country's good in view and having the welfare and happiness of her citizens at heart, must, more often than is realized by the non-professional, stand idly by while such crimes are being committed. I know the delicacy of the subject; I realize the difficulty of approaching it with an unbiased mind, and the exceedingly great difficulty of laying down any hard and fast rules. Nevertheless I am firmly of the opinion that the question is one which should receive thoughtful consideration rather than the careless, sometimes flippant, treatment now accorded it. Laws regulating marriage are upon the statute books of all of our States. The age at which, and the degrees of consanguinity within which, the marriage contract may be made are stated with more or less definiteness, and one may ask, Why not state what diseases or tendencies to disease present in one or both parties shall be a bar to the contract?

It is extremely doubtful whether such legislation could be enforced for many reasons, some of which will immediately occur to my hearers, but something possibly can be accomplished by the strong force of professional opinion and by the influence, unseen,

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but nevertheless potent, of the family physician upon those under his professional care. The tendencies of heredity are not "always to the better," and "benign nature" is very untrustworthy.

'Tis a happy optimism, perhaps, which can blindly trust

> "That somehow good
> Will be the final goal of ill,
> To pangs of nature, sins of will,
> Defects of doubt and *taints of blood*,"

but an optimism which no thoughtful physician, in the face of every-day experience can long entertain when questions of heredity are considered. Nature,

> "So careful of the type,
> So careless of the single life,"

needs sometimes wiser guides than lovelorn maids or lovesick swains.

If there be any doubt as to the practical application of Plato's laws in the matters to which I have just referred, there can be little question that in the matter of education of the youth, he was in many respects far in advance of many of the theories and practices of our own time.

Well-devised rules were laid down concerning the training of the young. The most careful attention was paid to good surroundings; nothing mean or vile was to meet the eye or strike the ear of the young scholar; music, literature, and gymnastics were first taught; gentleness was to be united with manliness; beauty of form and activity of mind were to be mingled in perfect and harmonious accord.

The object of education was to fit the growing child and youth to become a good citizen. The primary object was not the good of the individual as an individual, but the good of the State or the whole by making the units thereof best fitted to assume either the duties of citizens, teachers, or legislators. The object of learning is the good of mankind.

Bacon somewhere says: "Men have entered into a desire of learning and knowledge sometimes upon a natural curiosity and inquisitive appetite, sometimes to entertain their minds with variety and delight, sometimes for ornament and reputation, and sometimes to enable them to victory of wit and contradiction, and most times for lucre and profession, and seldom sincerely to give a true account of their gift of reason *for the benefit and use of man*, as if there were sought in knowledge a couch whereon to rest a searching and restless spirit, or a terrace for a wandering and variable mind to walk up and down with a fair prospect, or a tower of state for a proud mind to raise itself upon, or a fort or commanding ground for strife and contention, or a shop for profit or sale, and not a rich storehouse for the glory of the Creator and the relief of man's estate."

The Athenian youth was taught that his duty and the object of his training and education were the advancement of his country's

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good, not his personal benefit. In his oath on being admitted to citizenship he swore to endeavor to leave his country, as the result of his life, in a "better, not a worse condition."

How many of the youth of the present day or of the day when you and I, my hearers, were school boys and girls are or were taught such high ideals either by precept or example?

What effect upon the growing generation does the present-day strife for power and pelf have in enlarging its appreciation of the true value of learning, of the real power or influence of ideas?

I have, as I know you have for yours, a living and ever-present reverence for the teachers of my youth, but I cannot help realizing how low and mean were some of the incentives to work and study which were held up before the schoolboys of my day.

We heard much of the use and value of education, in getting on in the world, of the importance of economy and frugality, but little of ethical value of these to the individual or the State. Honesty as the "best policy" was taught; the true significance and importance of honesty in the character of the individual was too frequently overlooked.

Montaigne in one of his admirable essays thus speaks of education: "I willingly fall again into the discourse of the vanity of our education, the end of which is not to render us good and wise, but learned, and she has attained it. She has not taught us to follow and embrace virtue and prudence, but she has imprinted in us their derivation and etymology. We know how to decline virtue; we know not how to love it. If we do not know what prudence is really and in effect by any experience, we have it by heart."

And thus it is with much of the education of our times. There seems to be not only an unfortunate ignorance of the real object of education on the part of many who pose as teachers, but an equally, nay, more unfortunate, lack of appreciation of the nature and capacity of those who are to be educated. The same course and the same methods are applied to all scholars and the same results are expected. In many instances the teachers recognize the hopelessness of the task, but are ignorant of the origin of the difficulty, and so the fruitless experiment is tried over and over again of making all children conform to a fixed and arbitrary standard. The matter is one which comes wholly within the purview of medical science.

In some instances the difficulties in the way of progress by the apparently backward pupil are not far to seek. Remembering that all the impressions which reach the brain must come to it through some of the sensory pathways, it is often a simple thing to demonstrate that an unrecognized or neglected defect in sight or hearing has obstructed the channel for incoming impressions. In many cases, however, the defect lies deeper and is of more serious import. There are all grades of cerebral development, or, to put it another way, many varieties of cerebral defect, and in more instances than parent or teacher know the backwardness or apparent stubbornness of the unfortunate pupil is due to such innate defect that the capacity to receive impressions is either seriously impaired or practically lacking.

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Recently in New York city (*Medical News,* April 15, 1905, p. 704) a superficial examination by Dr. Luther H. Gulick, director of physical training in the city's educational institutions, has demonstrated that there are thousands of children admitted to the public schools every year who are absolutely mentally unfit to cope with the conditions which they meet. He says that fully 10 per cent. of the pupils of the public schools should have special attention. From 5000 to 10,000 are so deficient that they should have special instruction in small classes to fit them for any part in life.

I have not the least doubt that the same conditions exist here in Baltimore and in all of the schools of the State. I am told that an inquiry made some time ago confined to a limited number of schools showed that there were many pupils who remained term after term in the same grade, to the chagrin of the teachers, to the mystification and annoyance of their parents.

The laws of the republic of Plato lay down many regulations concerning teachers, both as to their duties and their selection. No hesitancy is shown in going abroad in search of the best that can be found, and no surprise is evinced by any of the participants in the dialogues when the statement is made that teachers shall be "brought from foreign parts by pay."

The methods pursued in some of our communities in the choice of those who shall instruct the youth of the land would seem to indicate that those charged with their selection were wholly oblivious to the responsibilities of their position or its importance to the community. The baneful influence of favoritism or practical politics plays an altogether too powerful *rôle* in our educational system in many instances.

In the surroundings of the pupil, in the ideal republic, you will remember that nothing mean or vile was to meet the eye or strike the ear of the young scholor.

How careless are we in this respect! Our very schoolhouses in many instances are lacking in architectural grace, and are too often placed in the most unfortunate surroundings. Happily, there is being aroused and cultivated in this country a taste for good architecture, both constructive and landscape, and those who control the erection of our schoolhouses are, I am happy to say, commencing to appreciate the importance of surroundings which shall cultivate a taste for the beautiful while the mind is being trained in an appreciation of the good and the true.

How few appreciate the influence which our material environment has upon the lives and mental development of the growing generation! How fully ought the medical profession to realize from daily experience the importance of these things!

If I may be permitted a reference to a personal experience, I would like to tell you how, years ago, in a large public hospital for the insane, I saw the character of the patients, in a portion of the institution devoted to the most excited and turbulent, changed by the addition to the formerly restricted limits of the long and narrow corridors, of large day-rooms, with frescoed walls, pictures hung within not only the view, but the reach of all, flowers, and singing

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birds. The same class of patients remained in the enlarged and brightened apartments, and to them the same class of new admissions were sent, but a reasonable degree of contentment and quiet took the place of noise and excitement. We had at first a few pictures broken, but they were easily replaced, and soon came to be respected, and, in short, the patients responded in a marked degree to, and appeared to appreciate, the esthetics of their surroundings.

Not the "magic numbers and persuasive sound" of music alone have power to "move the living soul," but beauty keeps

> "A bower quiet for us, and a sleep
> Full of sweet dreams, and health and quiet breathing."

If the physician is, as a citizen and as a professional man, interested in those things which go for the best training and culture of the coming generation, he is all the more interested in those matters which affect the life, health, and progress of the present, for they are elements which enter into his every-day life and occupation, which must be considered at every bedside.

As man has passed across the stage of human existence from the time of the cave-dweller to the present day, there have come to his nervous organization increased demands; more and more complex stimuli have demanded response from his nervous system, especially from his brain, and with the increased demand and response there has resulted a more complex and thoroughly differentiated organ. "The larger and more numerous and complex cerebral convolutions which distinguish the brain of a civlized person from that of a savage correspond with the capacities for the exalted ideas of justice, virtue, love, which the savage has not and cannot have." With the elaboration of structure to correspond with and meet the necessities of increased and wider function have come certain dangers or penalties. The greater the differentiation of parts, the more active the response to stimuli, the greater the instability, and consequently the more pronounced the tendency to disease. As Hirsch puts it in his work on "Degeneration," "A heightened mental action, a refinement and elaboration of the psychical organism, has for a consequence a greater disposition to mental derangement."

The straining after the meretricious in everything, the desire to be seen and known of men, which seems to be the predominating social feature of the times, among many of the citizens of our country brings as the inevitable result of the rush and push, the disappointment and ruin which so often follows from so many misguided ambitions its train of physical and mental wrecks.

An eloquent clinical teacher ("Collected Works of P. M. Latham," Vol. II, p. 345), writing 70 years and more ago, said: "Among the higher and educated classes there is in this age and country (England) a wonderful striving for all the objects of wealth and honor and power. We need only think upon the strife of politics, the hazards of mercantile gambling, and the wear and tear of hard professional toil to see how many there must be who, from the common business of life, have derived both to their minds

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and bodies new feelings and impulses and new susceptibilities of disease. These susceptibilities belong chiefly to the nervous system."

If the rush for power, place, and pelf were sufficient in its influence upon the health and mental and nervous stability of the race in the early half of the past century to attract the thoughtful consideration of medical men and the warning which I have just quoted, what must be the lesson to be gained from the conditions which confront us at the opening of the present century?

This is eminently the age of preventive medicine. Smallpox, cholera, the plague, malaria, typhus and yellow fever, as familiar conditions in the days in which the extract which I have read was written as are typhoid and pneumonia today, have been stamped out or are under control, and now we are commencing to grapple in an intelligent manner with the white scourge, tuberculosis. If, therefore, there is anything in the lives we lead, in the business or pleasures which we pursue, which leads in our children or in ourselves to mental wreck or moral deterioration, should not the medical profession take cognizance thereof, and, pointing out the danger, suggest the remedy?

From time to time there have occurred in this country more or less extensive agitations of the drink question, temperance reforms, and crusades. These have largely been based upon moral grounds, although the physical and material ills which follow in the wake of intemperance have by no means been ignored. Recently in some States attempts have been made to enlist the departments of education in the movement, and laws are upon the statute books of certain Commonwealths requiring the use in the public schools of elementary works on physiology which contain chapters upon the results of the alcohol habit from a physiological standpoint. Undoubtedly one of the best means of attacking this great evil is from the standpoint of the physiologist and pathologist, but I doubt much being accomplished by the methods at present in vogue in the public schools.

In Germany, in France, in Switzerland, and in other countries of continental Europe, but to a less extent than in the three which I have mentioned, there is a growing and active total-abstinence movement among medical men. This movement is having an influence with the people which I do not believe temperance as preached among us could possibly accomplish. In the face of the direful effects which intemperance has upon the city and State—the tax which it imposes upon the temperate and frugal to support prisons, almshouses, reformatories, hospitals, asylums, and schools for the idiotic and feeble-minded progeny of the drunkard, to say nothing of the cost of police and magistrates and all the machinery of the law, so largely occupied with crimes and misdemeanors growing out of the abuse of alcohol—in the face of these, is there not something which the medical men of the country owe to their fellow-citizens in their struggle against this evil? Can we not learn some lessons from our European colleagues?

When one considers the physical, mental, and moral wrecks not

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only among those given to intemperance, but so often seen in the generation which follows them, it would seem that as guardians of the public health this was a subject particularly belonging to the medical profession, that as good citizens it was one which medical men should thoughtfully consider.

Immigrants were to be received into the State for which Plato's laws were made, but only such as appeared to be of a desirable kind. The laws read: "Touching evil men who want to join and be citizens of our State, after we have tested them by every sort of persuasion and for a sufficient time, we will prevent them from coming; but the good we will, to the utmost of our ability, receive as friends with open arms."

Should not the voice of the profession of the whole country be raised in protest against the inefficiency of our immigration laws? Some effort has been made within a few years to shut out the defective and criminal, but much remains to be done.

Within one day last week over 11,000 immigrants landed in New York. For the year ending June 30, 1904, 812,870 foreigners landed in this country; over 260,000 remained in New York State. In five years, out of that number, enough voters may be naturalized to turn the scale of a national election at a time when the contest is a close one. Not only does this vast mass of people, ignorant of our language, laws and customs, threaten the stability of our political institutions, but there is imposed upon us and injected into the blood of the nation additional sources of pauperism, crime, and disease, additional burdens of taxation to provide for the very large proportion who will become public charges, either as criminals or defectives.

This is not a new question. Read the address of Dr. Foster Pratt before the American Public Health Association at Detroit, Mich., in November, 1883. He pointed out that though the tenth census showed the foreign-born to be but one-eighth of the population, one-third of the insane, one-third of the paupers, and one-third of the criminals of the United States were of foreign birth.

The census of 1880 showed that in the State of New York 23.8 per cent. of the population were of foreign birth, while 44.8 per cent. of the insane in the State were born out of the country. By the last census 26.1 per cent. of the population of New York State were foreigners. From September 30, 1888, to September 30, 1903, a period of 15 years, 78,364 patients were admitted to the State hospitals for the insane in New York. Of these, 38,163, or 48.6 per cent., were foreign-born. In other words, of the $4,000,000 and more which New York State expended in the fiscal year ending September 30, 1903, for the maintenance of her dependent insane, to say nothing of large sums expended for additions to her State hospital system and for repairs and improvements, nearly one-half was expended in the care of persons born out of the country. New York is somewhat unfortunately situated in this respect. The larger proportion of immigrants land in New York city, and a considerable proportion, last year over 30 per cent., remained in the State, but what has been the experience there is the experience to a less degree in every State in the Union.

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The momentum which certain acts attain, as has been pointed out by Herbert Spencer, are little understood or appreciated by our legislators, and when our fathers invited the oppressed and downtrodden of the Old World to seek a refuge on our shores, they could not foresee the results which would flow therefrom. In their days a ship which could land 3000 persons in New York within a week or 10 days of leaving Europe was unthought of, and when their invitation was extended they expected those who sought a refuge here to come by the then known modes of travel, which, by reason of expense and limited capacity, naturally kept back the pauper classes which in more recent years have poured in upon us.

The individuals or corporations, moreover, who sought the cheap labor of the Old World did not anticipate that the gain they hoped to make might be greatly diminished by the taxes imposed to support the criminal and defective among those laborers.

Dr. Pratt, in the address to which I have referred, speaking of this great evil, says: "Let us protect ourselves from the immigrant bringing inherited and transmissible defects with even more vigilance than from the contagious and infectious diseases of short duration. Regard not so much the danger of today and tomorrow as the dangers of the next and the next and all ensuing decades of national life and well-being." Concluding, he says: "Because of our profession and occupation we are expected to know the facts, the dangers, their causes and their cure, and we are expected to lead public opinion and action. Shall we, by doing nothing, produce the belief in those with whom is the remedy that there is nothing to do?" I leave this question with you, as one which demands from you, as physicians and citizens, as guardians of the republic, an answer.

One is somewhat naturally led from the topic which we have just been considering to the subject of the care and custody of the insane. The medical profession has always led the way in the reforms and improvements which have taken place in the matter of the treatment of the insane. Pinel, the Tukes, Conolly, Griesinger, Kirkbride, Gray, Chapin, and a long list of others have pointed out better, more humane methods of care and custody. Pinel, Esquirol, Benjamin Rush, Jacobi, Griesinger, Meynert, Krafft-Ebing, Cowles, Kraepelin have worked upon the problems of the pathology and treatment of the psychoses.

Just now here in Maryland we are at the parting of the ways. The State has declared that after 1909 all the dependent insane shall be cared for in hospitals controlled and directed by the State and at the expense of the State. The measures necessary to the consummation of this great desideratum must be drawn with much care and with due consideration of all the interests involved. When the condition of some of the insane in the jails and almshouses of the State is known the natural inclination is to attempt or hope to anticipate the date fixed. But questions of tax levies must be solved, buildings must be erected, a code of laws regulating the admission, detention, care and discharge of patients must be enacted, and the time permitted for all these things is none too long.

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The active and earnest State Commission of Lunacy and the State officials have this matter in charge, but between their plans and the accomplishment thereof stands the State legislature, the members of which need a deal of instruction and missionary work.

I shall not soon forget appearing with the late Dr. Rohé before a committee on ways and means in Annapolis in support of some measures looking toward the betterment of the insane at Spring Grove. The honorable chairman, learning that the care of the insane at the State hospital at Catonsville cost about $150 a year per capita, remarked, "In our county we keep them at so much," naming a price which I am ashamed to repeat—less than would be paid for the most ordinary care and keep of a most ordinary horse. Legislators have not changed, gentlemen, since that day, and, as I have said, there is room for missionary work of a most excellent kind, of the kind to which you are well adapted if the indigent insane in our State are to be properly cared for.

Something may perhaps be expected from me regarding the great questions which are now agitating this city—better and cleaner streets, sewers, enlarged and beautified parks and parkways. Did I not think the question practically settled, and settled as I believe it should be, I might be tempted, even at the risk of insulting your intelligence and further taxing your patience, to make a plea for clean, well-paved streets, a protected water supply of sufficient quantity and assured purity, and a system of sewers and of sewage disposal.

One thing, however, I would urge upon you, citizens of Baltimore: whatever you do, do it thoroughly. Much that I hope you will do will be for posterity, and it is well that it should be. Having received much from those who have preceded you, it becomes you to hand down to those who come after you even more, for you have had greater advantages, wider opportunity, than did your ancestors. You remember the words of Ruskin (The Lamp of Memory—Seven Lamps of Architecture): "When we build let us think that we build for ever. Let it not be for present delight nor for present use alone; let it be such work as our descendants will thank us for, and let us think, as we lay stone on stone, that a time is to come when those stones will be held sacred because our hands have touched them, and that men will say as they look upon the labor and wrought substances of them, 'See! this our fathers did for us."

And yet, after all, build as you may, clean and ornament your city as you may, it will not be the noble buildings, the long lines of well-paved and clean streets, the enticing and restful beauty of your parks, nor wealth, nor extent of commerce which will make your city, but the citizens thereof, and among those citizens you are fortunate in having an organized body of intelligent physicians who may be at all times relied upon to aid in fostering the material affairs of the city, as well as guarding its sanitary interests and those of its citizens. Twenty-nine years ago a noted English scholar and man of science, at the opening of the great university in whose hall we meet this evening, said: "Your sole safeguard is the moral worth and intellectual clearness of the individual citi-

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zen." His words, applied then to the whole country, apply with equal force to this city and this State.

There are other matters pertaining to our State and city upon which, did time permit, I should like to touch as being embraced in those which should interest all citizens, but particularly those who are guardians of public health. The Greek republic by its laws was to be provided with good roads, and in our own time and State the construction and maintenance of good roads continues to be a matter of much importance and serious debate. The preservation of our streams and rivers, the general water supply of the State, is a matter more serious than many realize, and connected with it, in a large measure directly related to it, is the preservation of our forests and the scientific reforesting of the denuded woodlands of the State. Greater wealth would soon flow to the State from which I am familiar. Not only that, but the effect upon the climate, upon the rainfall, upon the amount of water in the streams and rivers of the State, and generally upon the public health is impossible to estimate.

Maryland has been favored with many public-spirited citizens. They have been found in all walks of life—in business pursuits, among the clergy, the lawyers, the doctors—and her position today among her sister States is due to the devotion of her many sons.

Moses Sheppard, Johns Hopkins, Samuel Ready, Thomas Wilson, Enoch Pratt, Michael Jenkins, and many others here in Baltimore and in this State have recognized not only the responsibilities, but the opportunities of great wealth.

The sick, the halt, the blind, the insane, the orphan, the anxious mother and tender infant, and the student seeking knowledge or handicraft at the best sources have occasion to bless their memory. But is there not danger of too much dependence upon public or private charity or aid?

People forget the delights of independence and lose that reverence or respect for things which cost them nothing, which is associated with those which are won by the sweat of their brows. This getting something for nothing, this dependence on private munificence, or the attempt to make our government, whether national, State or local, paternal in character has its distinct disadvantages, nay, even dangers.

The child who is taught that it is the function of government to furnish him not only free education, but free books, free transportation to and from school, and even free lunches while there, loses half, and more than half, of his conception of the value of his education. He respects and treasures a book which has cost him or his parent some self-sacrifice, and early begins to have that love which all true scholars have for the records of the wisdom of the ages. Is it not possible that we are unwittingly doing something to train up a generation of men who will look upon the public treasury as their legitimate spoil, the embryo successors of the so-called "grafters" of the present day?

I would not place one single block in the way of the education of every child in the community; nay, I would even go to greater extremes than are now practiced to compel parents and guardians

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to send children to school; but are we not making education in some respects, in some of its features, too free, too common? These, as well as some of the questions involved in the medical charities and free dispensaries, are certainly of interest to physicians, and in their capacity not only as physicians, but as citizens.

The medical citizen who solves some of the more pressing problems of private and public charity, and especially of the altogether too indiscriminate medical charities of large cities, will be rendering his profession and the community a signal service.

Gentlemen of the medical profession, in the code of laws to which I have from time to time referred there were provisions made for certain trained and selected citizens who were termed guardians.

Your profession and training, the demands of professional honor, constitute you guardians of certain of the interests of your fellow-citizens, and you are good or bad citizens as you perform or neglect your duties. Those duties are not confined alone or solely to matters which are commonly regarded as strictly medical.

As men of reputation and extensive acquaintance in your several communities your advice will be sought, your example followed in matters political. Your knowledge of men will help you in advising who will make the best legislators, councilmen, school commissioners and even mayors and governors. I do not propose to talk politics or advise the use of this organization for ordinary political purposes. There are questions, however, upon which the united voice of the members of this Faculty might well be heard, and, being heard, would have a powerful influence.

The other day in a not far distant State, in a board having to do with the highest educational interests of the State, there was danger of a wholly incompetent and, to the interests of better education, dangerous man being elected. The medical men of the State became interested, and by their united efforts, in the face of the opposition of the dominant party, their candidate was chosen.

In matters relating to public health, to education, to the care of the dependent and the defective you can, if you will, make yourselves as strongly felt, and as these are matters upon which you are better prepared to pass correct judgment, your duty is plain.

If you are adverse to serving in local or State legislative bodies, your voice should and can be potent in the selection of those who will represent you. Party influence and party fealty, I know, are powerful agents, and often agents for good, and are necessary in our political methods; but sometimes there are higher claims than those of party, and those claims should be, and by the majority of the medical profession are, I believe, recognized.

Let us measure the men we are asked to place in position and power by the same standard we would use in placing our private interests in their hands. Let us investigate their ability to make or execute laws, remembering, with Spencer, that "there is no political alchemy by which you can get golden conduct out of leaden instinct."

We hear now and then of the force of awakened public sentiment. The very phrase implies that public sentiment sometimes sleeps, and while wakening and rubbing its eyes and getting its

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bearings your practical politician, who never sleeps, will snatch the prize for which he is scheming—the control of public affairs, the key of the public treasury. What is needed in this land and in this day is a live, active, wide-awake, *always vigilant* public sentiment, not one which needs awakening or is only aroused into action by some public or official scandal. In this respect no class can set a better example than the members of the profession to which we belong; none, I fear, is more apt to feel that these matters need not engage its attention.

We are, I take it, united as to the necessity of clean and well-paved streets, of a pure water supply, of an efficient system of sewerage for our cities and towns, and yet of the hundreds of doctors who realize the importance of these matters, how many personally take the pains to help secure the best men and the most efficient means to accomplish these things?

I believe that certain pessimistic members of the profession hesitate to support the measures looking to hoped-for sanitary improvements here in Baltimore because of doubt as to the honesty or ability of those who may have charge of the execution of the work.

Have those men, have the majority of us, taken occasion to teach our public servants that "corruption wins not more than honesty?" Have we not the rather looked upon dishonesty in official and business life with a too easy tolerance? Have we not sometimes purposely kept our eyes closed to crimes against the community lest we be given some trouble in helping to bring the criminal to justice? Have we not, indeed, with easy good nature on occasion given our voices or names to aid those who sought to mitigate the punishment when the criminal was at last convicted?

When the betrayer of a public trust is made to feel the weight of public opinion and the force of social and business ostracism; when the man who robs the public treasury or a bank or a trust company is punished as certainly and with as little of the law's delay as the petty thief who robs a hen-roost; when from private or semiprivate business affairs "graft" is eliminated, then, and not until then, may we feel certain that our civic corporations are conducted with as much regard for the stockholders' interests, the interests of the citizens of those corporations, as are our many successful and honestly-managed private corporations. That day will come only when you and I take as much and as active interest in the selection of those who conduct those corporations as we would in learning who are the directors of the corporation which is to manage our private investments or guard our estate if we are fortunate enough to accumulate one.

These, then, are some of the elements in our social or political life concerning which the members of the medical profession are particularly qualified to instruct or guide public opinion and public action, and which as good citizens they are bound to take into thoughtful consideration: The importance and force of heredity, the true nature and object of education, and the best methods of imparting an education; the necessity and value to the developing mind of such environment, both mental and material, as shall develop a love for and an appreciation of the true and the beautiful;

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the selection of those who are physically and mentally equipped for an education, and the selection of that form of education best adapted to the individual.

The methods of modern life, intemperance in living, in eating, in drinking, are subjects upon which physicians daily admonish their patients, but as to their influence upon the general public the force of example, possibly too little is said.

Life in a modern city is not well calculated to prolong life or make it more comfortable. The effect upon the nervous systems of its citizens, of the noise, the rush, the bustle of a city's streets, cannot be calculated, but is by no means a negligible quantity in enumerating the causes of nervous diseases.

The care of the dependent, the sick, the defective, the regulation and control of immigration, the most vigilant scrutiny of all that may affect public health, and a hearty co-operation in every way with the public health authorities are all part of the citizen doctor's duties.

And, lastly, a proper active patriotic interest in the political movements of his State or locality, the use of his knowledge and influence in the selection of public officials, and in holding them to high ideals and strict accountability fall within his line of duty, as they do within that of every citizen of the State.

I have, I feel, but crudely drawn the outline of a picture, the details of which you can fill in better than I can. But I believe no higher calling could come to you; no more responsible office be yours, with greater capacity for good, than the plain every-day duties of a citizen as they are seen or should be through the eyes of a well-informed physician.

In performing those duties opposition, misrepresentation, contumely will meet you. Seldom will any reward for your self-imposed task come to you. Those you are attempting to aid will misinterpret your motives and oppose your efforts.

You have seen your professional brothers sacrifice the allurements of home, the enticement of wealth and ease—aye, even life itself—that pestilence might be studied and its progress stayed. You have seen from their work that "Peace hath her victories no less renowned than war," and "higher tests of manhood than battles ever knew."

Their work has not only enlarged your professional knowledge, enhanced your professional skill, but wealth uncounted has and will result to this nation and others by reason of their devotion to humanity and science.

To them or their memory but scant tribute has been paid. But this must not deter you. The power, the influence, the knowledge is yours, and as you use them to the healing of the nation, to the uplifting of humanity, to the rooting out of disease and misery, and crime, and corruption, you will be sustained and blessed, as those others who have gone before you have been, by the consciousness of duty done. Great deeds, like a noble piece of statuary, require to be viewed from a proper distance to be fully appreciated, and so to your memory will come in time, as will come to theirs, the tribute of a grateful posterity.

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AN OUTLINE HISTORY OF DR. OSLER'S PROFESSIONAL WORK.

"We cannot now go very curiously to work to scrutinize the character of his work; we cannot take that large, free, genial nature to pieces and weigh this and measure that, and sum up and pronounce. We are too near as yet to him." These words, spoken of another man who had undergone a translation much more serious than that from Baltimore to Oxford, may well be quoted at the beginning of an article dealing with Dr. Osler's professional work.

It is of interest to note his early training, for on it the structure of later years has been built. Dr. Osler has said that a man should come into internal medicine by one of three ways—physiology, physiological chemistry, or morbid anatomy—and which he chose will be evident. He began his work at the Toronto School of Medicine, later going to McGill University, where he graduated in 1872. After this he went abroad for two years, going first to London, where he devoted special attention to work in physiology with Burdon-Sanderson, his predecessor in the chair of medicine in Oxford. At the same time he was attending clinics at University College Hospital, where he followed Jenner and Wilson Fox in medicine, Ringer and Bastian in the outdoor department, and Tilbury Fox in dermatology. From London he went to Berlin, where he studied under Virchow and did work in physiological chemistry with Salkowski. At the same time he followed the clinics of Frerichs and Traube. Early in 1874 he went to Vienna, where the first half of the year was spent under Bamberger and Hebra along with work in special courses. How much these years spent abroad meant need not be told to those who have worked under him or listened to his clinics. The impressions then made of the methods of the Teutonic clinics doubtless had much to do with his resolve to fashion the medical department of the Johns Hopkins Hospital along the same lines.

In 1874, on his return to Montreal, he was appointed professor of the institutes of medicine, which included the course on physiology and a series of 20 lectures on pathology. For this he was given a certain amount of apparatus, but, as he has jestingly said, "it never would work." Instruction in histology was soon added to this course and the first practical work given in 1875-76. About this time demonstrations in physiology were given on Saturday afternoons, and in the next year a course in pathological histology was begun during the summer session. In the end of 1874 he was appointed physician to the smallpox hospital, a position which he held for nearly a year, and with the salary of this, microscopes

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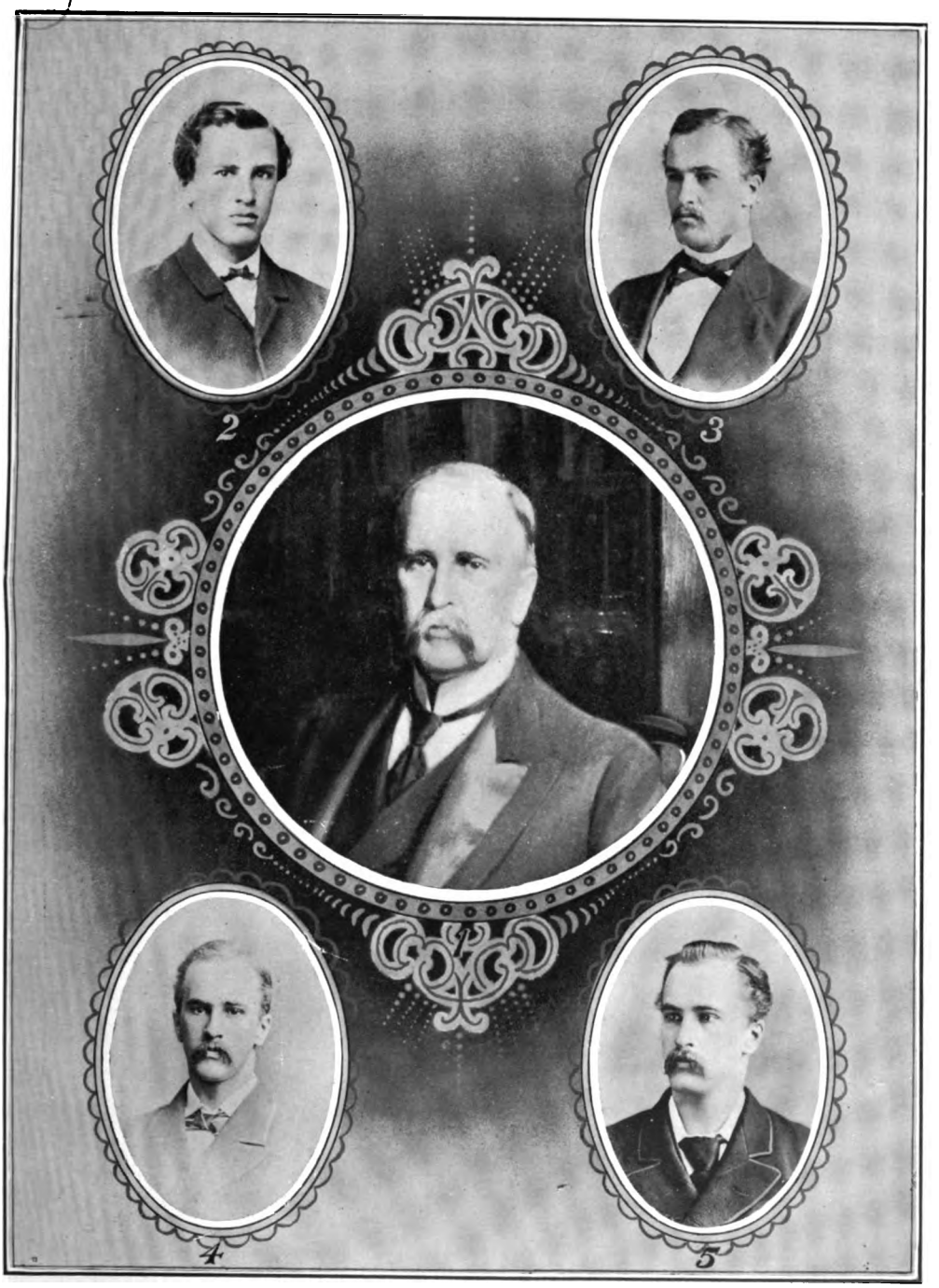

WILLIAM OSLER

(1) From a recent painting by Corne. Presented to the Medical and Chirurgical Faculty by the members.
(2) As a schoolboy (dux of the school) at Trinity College, Port Hope.
(3) In his early student days at McGill University.
(4) In his post-graduate course. Photograph made in London.
(5) The "Baby Professor" at McGill University.

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were bought for his department. In the winter of 1875-76 he began to do the autopsies at the Montreal General Hospital. During the next eight years he did about 1000 autopsies, the majority at the hospital, but a considerable number outside. In 1878 he was appointed physician to the Montreal General Hospital and began his work in clinical medicine. The importance of the work which he was doing at this time is seen in the light of his subsequent development. The opportunity to work in clinical medicine and at the same time act as pathologist can naturally come to few men. The influence of the work done during this early period in Montreal is well shown in his publications during later years. To the work in physiology and histology was probably due the great interest he took in various problems connected with the structure of the blood, especially the blood plates. To the training in the autopsy-room is due his accurate knowledge of morbid anatomy. Everywhere in his writings an accurate knowledge of pathology is shown, and his Montreal statistics have been extensively used. His demonstrations in the autopsy-room are as instructive as his clinics in the wards. He has shown the importance and value of an accurate knowledge of morbid anatomy to the clinician—an important matter when we think that there are clinics in which gross pathological demonstrations are almost unknown.

During these years in Montreal he had been engaged in other lines than those of strict professional work. As a student he had done some work in zoology. He became much interested in comparative pathology, and for a time was the professor of helminthology in the Veterinary College. He has often illustrated a point in human disease by a reference to a similar condition in the lower animals. He carried on with Dr. Clement an extensive investigation into the condition of the pork supply of Montreal.

In 1873 he took the degree of licentiate, and in 1878 the membership of the College of Physicians of London. In 1884 he was elected to the fellowship of the college, and in 1885 delivered the Goulstonian lecture.

Among the publications of the Montreal period are some on zoological subjects which appeared in the *Canadian Naturalist*. One of these was on certain parasites found in the blood of the frog. At this time the study of blood conditions was growing in importance, and Dr. Osler early became interested in it. He contributed several articles to the German journals dealing with pernicious anemia. He became specially interested in the subject of the blood plates, on which subject he continued to work for many years. There were also clinical and pathological studies, among which those on ulcerative endocarditis should be specially noted. This was the subject which later he selected for his Goulstonian lectures. The first paper on this subject was presented at the International Medical Congress of 1881. There were also articles dealing with unusual anatomical and pathological conditions. At this time the report dealing with the parasites of the pork supply of Montreal was published.

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To estimate the work done during the years spent in Montreal is not easy. If there was comparatively little published as compared with later years, there was much accomplished which was to see the light in the future. Many of his later publications show the result of this early work. It is well to consider how many-sided that work had been—physiology, histology (both normal and pathological), pathology (both human and comparative), and with all this much clinical work. The most noteworthy publications perhaps are those dealing with certain problems relating to the blood and the study of malignant endocarditis.

In 1884 came his removal to Philadelphia. The following year he was appointed Goulstonian lecturer at the College of Physicians of London. A word regarding this may be of interest. This lectureship was established in 1632 by Dr. Goulston, a fellow of the College, who left a bequest for the maintenance of a lecture to be delivered annually within the College of Physicians, "the lecture to be read from time to time by one of the four youngest doctors in physics of the said College upon two or three or more diseases." The lecturer is now chosen from among the newly-elected fellows of the College, and to be appointed is one of the highest honors which can come to a young man in English medicine. Dr. Osler chose for his subject "Malignant Endocarditis," and the lectures were based especially on his Montreal studies.

During his stay in Philadelphia we find many additional subjects being taken up in his papers. The work on blood conditions was continued, and in the Cartwright lectures delivered in 1886 he discussed the vexed question of the blood plates. There were many clinical problems considered. We find papers on subjects about which he is still writing, such as the various forms of purpura, angioneurotic edema, etc. About this time the question of the correctness of Laveran's views regarding the parasites of malarial fever was frequently disputed, and Dr. Osler upheld the correctness of his observations. Many of the papers published at this time deal with neurological subjects and show how greatly he was interested in this subject. The largest single contribution was the monograph on the "Cerebral Palsies of Children," a clinical study from the Infirmary for Nervous Diseases in Philadelphia. This was published in 1889. There are papers on various subjects, for the most part clinical, which it would take too long to mention.

In 1889 Dr. Osler took charge of the medical clinic of the Johns Hopkins Hospital. From this time dates the period of his greatest activity in professional work. Naturally, it is not correct to consider all that a man publishes in a given period as due to work done then. The foundations may have been and probably were laid long before. It is not easy to properly review the work of this period. One need only go through the volumes of the *Hospital Bulletin* and *Reports* to see how much has been brought out in the Hospital's own publications. It is perhaps best to consider some of the most important contributions under the headings of various

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DR. OSLER'S BALTIMORE RESIDENCE

This fine old Colonial house, occupied by Dr. and Mrs. Osler during the past 15 years, will be replaced by a seven-story apartment-house known as "The Osler," the process of erection to begin at once. The present structure was built 70 years ago, and is one of Baltimore's landmarks.

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diseases, it being kept in mind that there are many which are not touched at all:

1. *Typhoid Fever.*—He has probably written more extensively about this disease than any other. General and special papers, reports on symptoms, diagnosis, treatment, etc., have all appeared. The wider problems have been considered, and there is probably no clinician who has made so many valuable contributions on this subject. The necessity of the careful study of the two great acute diseases, typhoid fever and pneumonia, has been an oft-emphasized point in his writing and teaching.

2. *Tuberculosis.*—There are many articles on this subject, and to go over them would be to state almost every feature of the disease. The section on tuberculosis in the Loomis-Thompson system of medicine was written by him. Perhaps no one thing in his writings on this subject has been more quoted than the application of the parable of the sower. The use of Bunyan's phrase, "Captain of the Men of Death," has also gone into the literature.

3. *Cerebrospinal Fever.*—This was the subject of the Cavendish lecture delivered before the West London Medico-Chirurgical Society in 1899. There are articles dealing with special phases of the disease.

4. *Parasitic Diseases.*—Two of these, malarial fever and amebic dysentery, should be mentioned. With the first observation of the ameba dysenteriae in this country his name is associated.

5. *Cretinism and Myxoedema.*—On these subjects he has written extensively. The most elaborate article was that on cretinism presented to the Congress of American Physicians and Surgeons in 1897.

6. *Neurological Subjects.*—There are many papers in this department too numerous to be detailed. The most important are the monographs on the "Cerebral Palsies of Children" and on "Chorea and Choreiform Affections." There are several articles on the tics.

7. *Cardiovascular System.*—There are few conditions of the heart and vessels which he has not discussed. Endocarditis, aneurism, intermittent claudication and arteriosclerosis may be mentioned. The largest work is the monograph on "Angina Pectoris."

8. *The Blood.*—The studies on the blood plates have already been noted. Of the special blood diseases pernicious anemia has perhaps received the most attention. On splenic anemia he has written much and has studied a large number of cases. The condition of chronic polycythemia with other features has been specially described by him.

9. *Gastric and Hepatic Diseases.*—Of his writings on stomach conditions the monograph on "Cancer of the Stomach" may be noted. He discussed the subject of gastric atrophy some years ago. Of the papers on hepatic disorders perhaps the most impor-

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tant are those dealing with the symptoms associated with stone in the common duct. Amebic abscess of the liver has also received attention.

10. *Trophic Diseases.*—There are many papers on these subjects. Scleroderma, Raynaud's disease and angioneurotic edema have been discussed in many papers.

To give merely the headings of subjects on which he has written gives no idea of the scope and variety of his writings. To give a detailed list would require much more space than is available. On diagnosis he has written a well-known work, "Lectures on the Diagnosis of Abdominal Tumors." Throughout his writings there is everywhere emphasis laid on the importance of diagnosis. There is always the reminder that correct diagnosis must precede proper treatment. The saying of Celsus has been kept in mind—*"Vero eum curaturum recte, quem prima origo causae non fefellerit."* In therapeutics he has held that a correct estimate of the exact condition was the first requisite; then can come intelligent treatment. But a well-based skepticism as to the value of much which is considered good treatment by drugs is evident in his teaching and writing. Fresh air, sunlight, general hygiene and diet are always emphasized as important. The giving of drugs is only a part.

To his greatest work, the "Practice of Medicine," it is hardly necessary to refer. Used perhaps more widely than any textbook in the English language, it is so well known that any reference to it is unnecessary. It stands as the best example of his methods.

To give an idea of the style of his writing would be difficult. To those who are familiar with it any such attempt is a work of supererogation; to those who are not—if there be any such who read this, which is unlikely—the advice can only be given to learn at first hand. Perhaps of those who write on medicine in English at the present time two stand out as having the most distinctive style. They are the regius professors of medicine at Oxford and Cambridge—William Osler and Clifford Allbutt. It is a fit coincidence that the representatives of our art in the chairs of medicine at these two universities should be examples of the best development of an English style.

Of the influence of his professional work this seems hardly the proper time to speak. He has ever stood for exact and careful work, for rational methods of teaching, for intelligently-directed treatment, and above all for the exercise of charity by members of the profession both to their patients and to each other. In his speech at the dinner given by the profession in New York on May 2, Dr. Osler said that there were two things for which he had striven—to become a good clinical teacher and physician, and to establish a clinic along Teutonic lines. That he has succeeded in these is very evident; that he has succeeded in many other things we all know just as surely.

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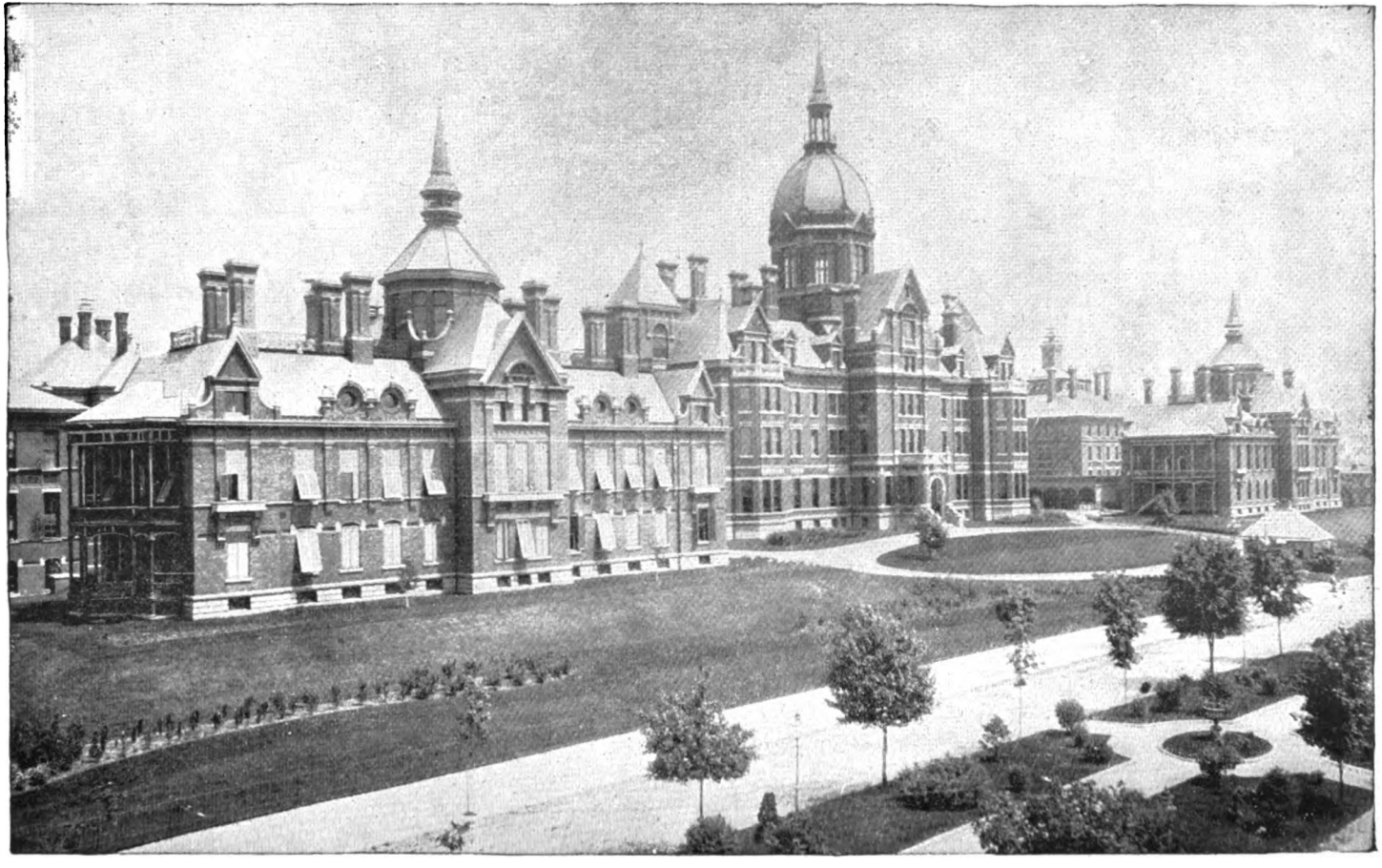

JOHNS HOPKINS HOSPITAL

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DR. OSLER'S METHODS AS A TEACHER.

WHEN a great loss occurs in any system it is inevitable that upon the cause of that upheaval shall be focused the eyes of everyone. And so in the departure of Dr. Osler, the acknowledged leader of American medicine, American physicians, to each of whom his going is a distinct personal loss, all see, as in a glass clearly, what he has been to them, what he has represented in their scheme of life, what note he has touched in their minds and souls that had he never come into their lives would have remained mute until the end of time.

Some, blessed of the gods and yet by the gods bereft, see in his departure the going of a friend strong, stimulating, ennobling; to others there fades into the East a shape which has cheered them when sorrowing and brought light into their darkness; the city of his adoption mourns the loss of a great and good citizen, one whose voice has rung out loud for civic right and civic virtue. But the loss has fallen heaviest upon the American medical fraternity in general and Dr. Osler's students at the Johns Hopkins in particular, who mourn the departure of the great teacher, who by word and by deed, by the loud voice from the hilltop, by the small voice from the study, has shown them as no one else could the true path of the true physician.

In trying to discuss Dr. Osler as a teacher it is in a sense trying to paint the unpaintable, to grasp the intangible, to penetrate a genius which is impenetrable. And yet, even bereft of the personality of the man, divorced from the ever-present magnetic charm so peculiarly his own, his methods of teaching medicine are epoch-making in the education of the American medical student. Many of his views upon this subject are expressed in two of his essays "On the Need of a Radical Reform in Our Methods of Teaching Senior Students" and "The Master Word in Medicine," and every teacher in this oldest of professions should read these, for they will be richer in knowledge and better able to cope with their daily problems for the reading.

As he says, "Improvement in medical education has been in three directions—in demanding of the student a better general education, in lengthening the period of professional study and in the substi-

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tution of laboratories for lecture-rooms, in the replacement of theoretical by practical teaching. The problem before us as teachers may be very briefly stated: to give to our students an education of such a character that they can become sensible practitioners—the destiny of seven-eighths of them."

How is this to be done? Dr. Osler answers it in his essay, as he has answered it practically in the work of the Johns Hopkins Medical School—"Take the third and fourth-year student from the lecture-room, take him from the amphitheater, put him in the out-patient department, put him in the wards. It is not the systematic lectures nor the amphitheater, nor even the ward class, all of which have their value, in which the reformation is needed, but in the whole relationship of the senior student to the hospital."

And again: "My firm conviction is that we should start the senior student at once on his road of life." Let the student "begin with the patient, continue with the patient, end his studies with the patient, using books and lectures as tools, as means to an end."

Dr. Osler not only believes that the work of the hospital is better done by allowing students access to the wards, but he goes further, and says that "the work of an institution in which there is no teaching is rarely first-class. It is, I think, safe to say that in a hospital with students in the wards the patients are more carefully looked after, their diseases are more fully studied, and fewer mistakes are made."

In regard to the specific application of these views to practical teaching, Dr. Osler advises that the third-year students should be divided into small sections, which may be called clinical units, each of which should be in charge of one instructor. On three days in the week each of these units should devote part of their morning to elementary work and physical diagnosis, while the latter part of the forenoon should be devoted to practical instruction in the out-patient department. On the alternate mornings the clinical unit should be in the surgical out-patient department, seeing minor surgery, learning how to bandage, to give ether, and helping in all the interesting work of a surgical dispensary. Other hours of the day for the third year should be devoted to the teaching of obstetrics, materia medica, therapeutics, hygiene, and clinical microscopy.

In the fourth year the small clinical unit should be maintained, but its work would be transferred from the out-patient department to the wards. "Each man should be allowed to serve for at least half of the session in the medical wards and half in the surgical wards. He should be assigned four or five beds, and under the supervision of the house physician he does all the work in connection with his own patients. One or two of the clinical units are taken around the wards three or four times a week by one of the

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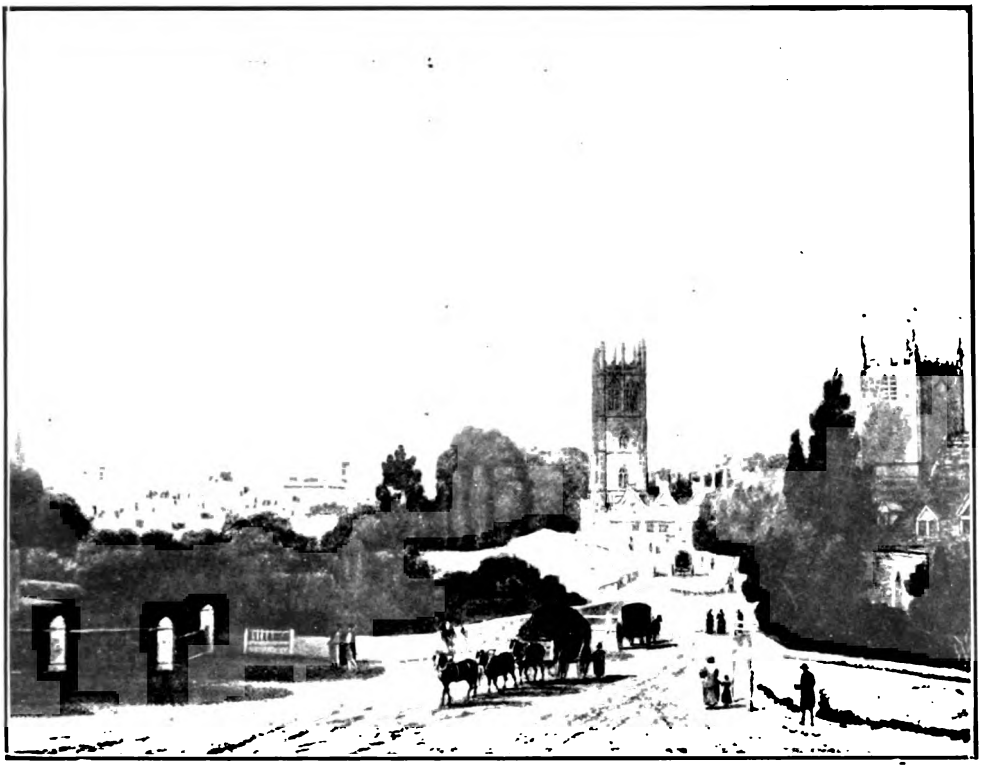

ENTRANCE TO OXFORD UNIVERSITY

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teachers for a couple of hours, the cases commented upon, the students asked questions, and the group made familiar with the progress of the cases. In this way the student gets a familiarity with disease, a practical knowledge of clinical methods, and a practical knowledge of how to treat disease."

Dr. Osler emphasizes more than once that this method of teaching is not a ward class in which a group of students is taken into a ward and cases demonstrated to them. It is ward work, the students themselves taking their share in the work of the hospital just as much as the attending physician, the interne, or the nurse.

As Dr. Osler well says, "This, after all, is an old method. It is the only method by which medicine and surgery can be taught properly, as it is the identical manner in which the physician is himself taught when he gets into practice. The old method and the true method, the method of Boerhaave, of the elder Rutherford of the Edinburgh school, and of the older men of New York, Philadelphia, and Boston, the men who had been pupils of John Hunter and of Rutherford and of Saunders, is to make the hospital a college in which, as clinical clerks and surgical dressers, the students slowly learn for themselves under skilled direction the phenomena of disease. It is the true method because it is the natural one, the one by which each physician grows in clinical wisdom after he leaves the school; all others are bastard substitutes."

The application of these views is seen in the methods employed by Dr. Osler in teaching medicine at the Johns Hopkins Medical School. He has shown the students how to become physicians in the broadest, best sense of that word. He has not sat upon a high mountain afar off and preached of disease, but he has taken the student by the hand and shown him disease, teaching him the necessity for thoroughness and for method, making of medicine a reality, and not a theory. He has been simple and direct where others might have been complex. Armed with his vast store of knowledge, he has talked to each student as man to man, he has advised him as a friend, and he has done more than that—by his infective enthusiasm, by the ever-present atmosphere of truth and sincerity which surrounds him, by his simple directness, by his strict attention to each and every duty associated with his position, he presents unconsciously an ideal for every student to live up to. He does not stop at showing the student how to become a physician; he teaches him how to live and do to become a human, broad-minded, full-souled, complete man.

Nothing shows better Dr. Osler's relationship to his students than the meetings held on Saturday nights at his house, at which the fourth-year students assigned to medicine gather to discuss their work. Here the week's duties are discussed informally, their

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difficulties and perplexities are smoothed away, advice is given as to the students' reading, medical and otherwise, and in every way the students are made to realize that, besides being their teacher, he is their friend and adviser.

And thus the effect of Dr. Osler and of his teaching upon his students is practically incalculable. He teaches them thoroughness and system and method, he teaches them the necessity for work, and he shows them what work can accomplish. He discloses to them the master word, "the open sesame to every portal, the great equalizer in the world, the true philosopher's stone which transmutes all the base metal of humanity into gold"—that little word *work,* which is fraught with such momentous consequences "if you can but write it on the table of your hearts and bind it on your foreheads." He teaches them the duty they owe to patients and to fellow-students, and through all his teaching runs that golden thread of charity and kindliness, of comradeship and friendliness, so that that student is dull indeed of mind and soul who is not better and stronger and wiser for his tutelage. To the student he is teacher, guide and friend, as he is comforter and minister of hope to the patient.

And what he has been to his students in medicine, in a broader sense he has been to the medical profession at large, and especially to the physicians of this city of Baltimore. He has taught them the value of work for the sake of work; he has shown them the beauty of labor; he has been to them an ever-present example of right living and right feeling and right thinking; he has shown by word and by example the duty the physician owes his patient, his brother in the medical fraternity and the community at large; he has broadened the scope of the physician's calling, and he has shown him that the good man and the good citizen must both be present to make the good physician possible.

And so, even though the paths that he has trod so long may know him no more, the memories of his teaching, his living, his genius will remain with his students, and these will be to them "the cloud by day, the pillar of fire by night," to guide them in their toilsome journey towards that far-away goal where, bathed in the luster of an Eastern sun, he holds eternal sway.

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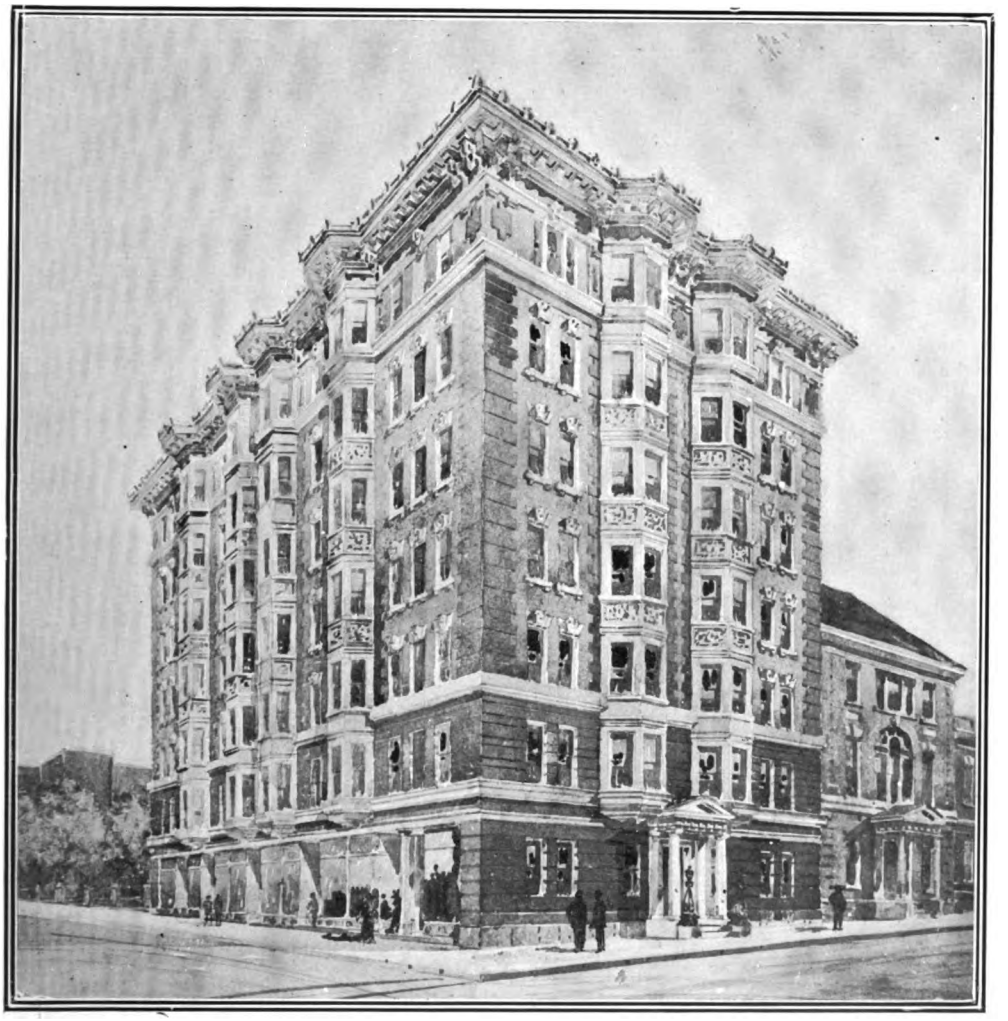

"THE OSLER"

The above reproduction is from the architect's drawings of the seven-story apartment-house to be built on the site of Dr. Osler's old home, Charles and Franklin streets, by Mr. W. L. Stork. The site was purchased from Dr. Osler last December, a few months after the Oxford appointment had been made known to the world.

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Current Literature.

REVIEW IN PEDIATRICS.

Under the Supervision of José L. Hirsh, M.D., Baltimore.

ON THE INTESTINAL ANTISEPTICS AND DISINFECTANTS IN THE TREATMENT OF INFANTILE GASTROENTERIC DISEASES. G. Mya. *Riv. di Clin. Ped.*, September, 1904; *Archives of Pediatrics*, March, 1905.

Mya seeks to show that the antiseptic treatment of gastroenteric diseases of children is not based on scientific principles, and that it may do more harm than good in some cases. He thinks that the treatment of these conditions demands not merely the writing of prescriptions, but proper attention to all the conditions which enter as causes of infantile diarrheas. He would like to see fewer prescriptions written for children affected with these maladies and more attention paid to diet and hygiene. Bouchard's theory of autointoxication, which was the basis of the modern intestinal antiseptic treatment, is not founded on scientific principles and has never been demonstrated clinically. The trouble lies in the fact that this theory applies the principles of toxicology to a totally different branch of knowledge—pathology. The author is convinced that the small amounts of indol, skatol, etc., which are found in the urine and in the feces, if mixed with a healthy man's food, would produce in him about the same effect as the fly in Aesop's fable. Clinical experience teaches that the process of intestinal putrefaction is far more complex than Bouchard would have it, and that we know as yet little on the subject of autointoxication. The use of intestinal antiseptics and antiputrefactive remedies is irrational, because it has never been proved that the symptoms which we wish to relieve are due to an excess of putrefaction or fermentation; it is irrational because no dose which can be borne can be hoped to influence the overproduction of the fermentative products so-called; finally, the use of these remedies is irrational because when they are given in sufficient doses they may actually do harm. The author reports several cases of this kind, including a case of poisoning due to the injection of resorcin solutions into the intestine of a child. The author therefore rejects all antiseptics in the treatment of gastroenteritis in children with the exception of the use of 1 per cent. solution of tannic acid.

* * *

A CONTRIBUTION TO DIPHTHERIA IN EARLY LIFE. A. Siebert. *Archives of Pediatrics*, February, 1905.

Siebert discusses three cases of diphtheria, all of which are of interest from certain points of view. The first case is one of hidden nasal diphtheria with severe systemic infection. The patient, a child 22 months old, was attacked with acute rhinitis, with

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a temperature of 105°; no membrane was visible in the nose or nasopharynx; there were a few small swollen lymph nodes along the posterior half of the neck, especially between the deeper muscles; some albuminuria was present. Upon these points the diagnosis of diphtheria was ventured and antitoxin used, when all the symptoms promptly cleared up. Not until the fourth culture was made, eight days after the use of the antitoxin, were Loffler bacilli found in the nasal secretions. The history of this case proves that a negative report as to the presence of diphtheria is of no value in a doubtful case of diphtheria, and that a serum test is indicated wherever diphtheria is suspected.

The second case is one of diphtheria of the tongue, lips, and the conjunctivae, with little systemic infection. Astonishing in this case is the expansion of the local colonies of diphtheria organisms, with so little poisoning. A doubt as to whether the organisms found were true or pseudo-diphtheria bacilli seems evident, as the Behring serum proved effective. Another peculiar fact is that no post-diphtheritic paralysis presented itself after this manifold and extensive surface infection.

Case 3 was a baby, eight weeks old; temperature moderate; was unable to swallow; there was no nasal discharge. The surface of pharynx and of the tonsils appeared pale and normal. On palpation multiple hard infiltration of the posterior cervical lymph nodes was found between the deeper muscles of the neck. On close inspection of the throat it became apparent that although attempts at vomiting were caused by the introduction of the tongue depressor, the muscles of the velum palati and of the uvula took no part in these contractions. This proved a paralysis of the soft palate, which explained the inability of the child to swallow. The diagnosis of diphtheritic paralysis was made and antitoxin used, and the condition cleared away in a few days. The author calls especial attention to two points. The first is the diagnostic value of multiple retrocervical lymph-nodular swellings in young children. If no other source is visible, like eczema capillitii, this phenomenon usually points to nasopharyngeal infection. The second point to be emphasized is the doubtful value of an early bacteriological finding. Exudate in the throat is highly suspicious of true diphtheria in every case, and Siebert prefers to rely on a serum test made in the body of the patient by an antitoxin injection than a search for bacilli in the laboratory.

* * *

THE TREATMENT OF SCARLET FEVER WITH THE MOSER ANTI-STREPTOCOCCUS SERUM. L. K. Shaw. *Medical News*, October, 1904; *Archives of Pediatrics*, January, 1905.

The author gives a short account of the experience in Vienna with Moser's serum. During the last four years all the severe cases of scarlet fever admitted to the Anna Kinderspital in Vienna have received the Moser serum, with results which are claimed to be not less remarkable than those seen after the use of diphtheria antitoxin. Moser profited by the experiences of Meyer and Pe-

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trusky and Koch, which had shown that streptococci passed through animals lose their earlier agglutination power with a certain serum, and that in the passage through rabbits the virulence of Marmorek's streptococci was increased towards rabbits, but decreased toward man. He did not attempt therefore to increase the virulence of his streptococci, but injected them as soon as obtained into horses. He injected some 30 different strains of streptococci, and the serum that he obtains is therefore a true polyvalent one. It takes seven to nine months to produce a satisfactory serum, and some horses never produce a satisfactory serum. No preservative is used for the serum. When sufficiently potent the serum, in a dilution of 1 to 250,000, should agglutinate the streptococci. The dose usually given is 200 c. c., and the only unpleasant result following its use is the serum exanthem. This, as in diphtheria, is often accompanied with fever, and it makes the children very uncomfortable. The custom at the Anna Kinderspital is to give the serum to the very severe and lethal cases. Marked improvement and recovery are claimed in many otherwise hopeless cases.

For more favorable cases the results from the serum are soon manifest. The fever falls to normal without collapse, the pulse improves, and the nervous symptoms rapidly disappear.

During the past four years 228 patients were treated with the serum, many moribund, and the majority severely ill. The mortality for the four years before the employment of this remedy was 14.5 per cent., and the four years since its employment 8 per cent.

Moser also uses the serum as a prophylactic measure in children exposed to scarlet fever.

* * *

A SUMMER'S EXPERIENCE WITH INFANTILE DYSENTERY. J. H. M. Knox. *Journal of the American Medical Association,* December 17, 1904.

Knox presents a very interesting and instructive study of 43 cases of infantile dysentery which came under his observation at the Thomas Wilson Sanitarium. In all of these cases the etiology of the disease was positively determined and all were infected with the so-called "acid type" of the bacillus dysenteriae. The cases are considered from a clinical and patholigic point of view. As to the post-mortem alterations the author says that it is evident that the dysentery bacillus does not always produce in the infant a uniform pathologic picture, but is capable of setting up alterations differing widely, both in severity and extent, from cases where the intestinal wall is practically unchanged to those in which large areas of the mucosa, particularly of the large intestine, is lost. The result of this study may be summarized as follows:

During the summers of 1902 and 1903 epidemics of diarrheal disorders among infants and young children appeared in Baltimore. A large proportion of these cases properly investigated were found to be produced by the proliferation in the intestinal tract of the B. dysenteriae (Shiga), the variety of the organism

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being the so-called acid strain, that is, the type of the bacillus which ferments mannite with acid production. In the histories of the patients, in the clinical manifestations of the disease, and in the pathologic lesions the cases appear identical with those of the epidemic diarrhea which have occurred for many years among infants in many American cities, and there is good reason for the confidence that the dysentery bacillus is an important factor of this great scourge among children. The disease begins in June, reaches its height in July, and gradually declines in August, although sporadic cases occur throughout the year. The number of cases appear to increase directly by excessively hot weather. Children under one year are most susceptible; those over three years are rarely attacked. Babies exclusively breast-fed are less often affected. Most of the cases occur among infants artificially fed. The simultaneous outbreak of so many widely-separated cases suggest that the casual organism does not reach the baby primarily through the milk, but rather through a carrier common to all, such as water, and an investigation of the water supplied the ill babies makes this hypothesis possible, though other sources of infection are recognized. Ill-nourished children, particularly those fed on condensed milk, are less able to withstand infection by the dysentery bacillus, and form a large proportion of the fatal cases.

The cases can be roughly divided into two groups—those in which symptoms of toxemia are most prominent and those in which there is evidence of a destructive lesion of the bowel.

Mucus was noticed in the stools of all cases. Blood was present in the discharges in moderate amounts in but 42 per cent., and pus in but 53 per cent. of the cases. Many of the deaths occurred late in the summer in long-standing cases of ileocolitis with ulcerated intestines. The keynote in the treatment is promptness. If the food can be stopped and the alimentary tract be emptied within a few hours after the onset of symptoms, most infections can be aborted. The results of antidysenteric treatment were disappointing. It was apparently in proportion to the shortness of time which elapsed between the beginning of the illness and the injection of the serum. Its use is perfectly harmless under antiseptic precautions. The prophylactic injection of serum into susceptible babies may prove to be an advisable procedure.

The alterations in the body produced by the action of the dysentery bacillus may be those of an acute toxemia only, or, in addition, there may be set up more or less destructive lesions of the lower bowel. In this later process streptococci and other organisms may play a part. The constant change noted in all cases was the enlargement (serous infiltration) of the mesenteric lymph glands.

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Society Reports.

THE JOHNS HOPKINS HOSPITAL MEDICAL SOCIETY.

MEETING HELD MARCH 6, 1905.

The symposium on the blood platelets was opened by Dr. Osler, who read a *résumé* of the history of the subject. The blood platelets had, he said, attracted a great deal of attention between 1857 and 1867 after the appearance of Schulze's original article in the *Archiv für mikroskopische Anatomie*, and their clinical significance was promptly studied by Ries, who wrote the first paper on this subject. In 1873 Osler, working in London, noticed peculiar nodules in the blood of subcutaneous and mesenteric vessels of white rats, and these he found to be the individual elements of Schulze's granule masses of agglutinated plates. Zimmerman had seen the same things previously and had called them elementary corpuscles. When watched on warm stages Dr. Osler and others noticed marked changes rapidly taking place in the platelets, which became elongated and diamond-shaped, and finally appeared as threads. It was suggested that they might be parasites, but in 1878 Hayem, in a large work on the subject, called them hematoblasts, testifying to his belief that the platelets played a *rôle* in the genesis of red-blood corpuscles.

Bizzozero then showed the platelets to be individual elements, and studied their relation to the red-blood corpuscles, working along the lines of Ranvier's previous suggestions. Next came the demonstration of the importance of platelets to blood-coagulation—the work of Eberth and Schlimmelbusch—which was followed by Osler's observation that white thrombi were made up largely of platelets. Modern study of the question has been concerned with determining whether the platelets were independent blood elements, whether they were precursors of the red-blood corpuscles, or whether they were artefacts due to cellular disintegration. The platelets have been usually overlooked in routine examinations, and their association with disease has not been carefully studied, though great increase in the wasting diseases was noted by Osler long ago.

Histology of the Blood Platelets.—Professor Kemp of Champaign, Ill., said that in the relatively few years that blood platelets had been known an enormous literature had sprung up on the subject. The platelets were best studied, he said, after immediate fixation, or by working in a low temperature and with cold glassware, when the changes in the platelets were slow and could be watched. At the end of some minutes (when studied at 40° F.) they became granular, irregular in form, gradually lost their individuality, fused into a mass, and finally broke down. *Pari passu* with these changes came the clotting of the blood, the fibrin being deposited thickly about the blood platelets, but independent of them, though the possibility of coagulation with intact platelets had never been proven. A smear of blood passed rapidly into salt solution (to wash off the corpuscles), and then put in 1 per cent. osmic acid gave a beautiful fixation specimen of platelets.

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There has been a good deal of discussion as to whether oval, discord platelets were biconcave or not—due, probably, to the change—in shape which occurs with the change in containing fluid. They probably do not contain hemoglobin, though Professor Kemp said that he had seen platelets during some observations at a high altitude which seemed to be exceptions to this statement. Their function is still a debated question, though it seems probable that they are hemotoblastic. The figures given by Arnold, which the author thought proved the platelets to be degenerated red cells, probably represented artefacts. Lowit thought the platelets to be precipitated globulins, and not true blood elements, but their observation by Osler within the blood-vessel and later by Bizzozero's son in the frog's mesentery and the bat's wing seem to prove them independent elements. They are best counted by the indirect method—determining first the red-blood count and then the ratio of platelets to erythrocytes. Professor Kemp found experimentally that if blood from an artery be defibrinated and injected back into a vein the platelets (after sufficient repetition of defibrination and injection) disappeared and the blood refused to clot.

Relation to Disease.—Dr. J. H. Pratt of Boston referred first to the great confusion existing in the literature as to the platelets, and said that there were marked differences between the Arnold bodies, which were artefacts, and true platelets. A good preparation of them could, he said, be prepared by fixing the smear in a solution of sodium metaphosphate in sodium chloride. Stained by certain methods, chromatin may be shown in them, and a pseudoameboid movement has been observed. In health the number of platelets varies greatly, but they average about 300,000. Dr. Pratt reported a series of diseased conditions with the plate-count in each. The lowest count (7000) was made in a case of purpura hemorrhagica. The platelets were never absent, but were greatly reduced in number in lymphocytic leukemia (series of eight cases, count varying from 10,000 to 99,000) and in pernicious anemia (series of 10 cases). In secondary anemics they may be increased—a point which may be of diagnostic value in distinguishing from primary anemia. An increase in platelets was found in myelogenous leukemia (count varying from 500,000 to 1,498,000), in chlorosis, in erythrocytosis, and in *severe* hemorrhage. Dr. Pratt thought the evidence was conclusive for regarding platelets as third corpuscles.

Dr. Emerson said that he had often seen pseudopodia extruded from platelets, but never any real ameboid motion with progression. The endoglobular degenerations of Maragliano had been shown to have a distinct existence, and it was possible that the platelets might represent extruded *"innere korper"* or might be due to the disappearance of the red-blood cell from about the *"innere korper"* and nuclear material. Dr. Osler said that the changes seen in the platelets were similar to the mechanical changes occurring in red-blood corpuscles, and were not truly ameboid. The great number of platelets in embryos and in wasting diseases had never been explained. Dr. Boggs referred to recent work done in Germany in reference to the relation of platelets to coagulation. It was found that if fibrinogen be treated with a mass of pure-blood platelets coagulation occurred rapidly, but took the plate much more slowly if leucocytes were used instead of platelets.

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MEETING HELD MARCH 20, 1905.

The Scope and Problems of Surgical Physiology.—This paper was read by Dr. Crile of Cleveland, Ohio. Surgery in its early days had been, he said, anatomical and empirical, but it had been wholly transformed by the origin and development of pathology and bacteriology. Physiology in its surgical relations was now, however, coming to the fore, as it was more and more realized how often surgical treatment rested on an understanding of surgical physiology. A stoppage of respiration, for instance, due to reflex inhibition was a very different phenomenon from a similar stoppage due to obstruction, and demanded therefore a different sort of surgical interference. Respiratory arrest could be caused by strong traction on the tongue, and a knowledge of this physiological fact might relieve anesthetizers of embarrassment, who, in their efforts to produce respiration, might, in their ignorance of physiology, be defeating their own purpose. The reflex effects of peritoneal manipulations were often overlooked, and the reflex expulsion of intestines through an abdominal wound was often blamed on the anesthetist when it was due really to peritoneal irritation. The surgical physiology of the circulation was of the utmost importance, and yet it was very incompletely understood. Often life itself, and more often still immediate operative results, depended on the proper care of the circulation. Independent of anesthesia, the mere handling of tissues might impart or even throw out of function completely the vasomotor centers, and a proper knowledge of the facts would make efforts to afford these centers efficient support more intelligent. The result of an operation is equal to the sum of the insults to the tissues, and blocking of certain of these insults by intraneural cocainization has minimized or even abolished shock after even such serious procedures as double-thigh amputations. The mere opening of an appendiceal abscess under cocaine, with an extensive curative operation later when the procedure could be carried on within physiological limits, was a good example of the safety of operative physiologic progression. Many of the facts of compensation by one organ for another were quite unknown, and yet a knowledge of them would be most important for surgical treatment. The nature of protoplasmic response to changed environment, determination of minimum circulatory requirements for each organ, discovery of practical methods for helping organs over a surgical crisis, the whole question of physiology of the lymphatics, of the surgery of thrombosis and embolism, of shock—here were problems almost untouched. The intricate problems of brain localization in human beings were still to be developed. And might it not be possible by cocainization to effect functional detachment of the medulla to protect it from injurious surgical stimuli? There had been hitherto a surgical fear of the heart; yet perhaps in the future operations on the valves might not be impossible. Our knowledge of the pulmonary circulation was infantile. Surgery of the stomach had but just been opened, and the suprarenals, thyroid, and pituitary body had been almost untouched.

Dr. Howell said that 30 years ago, when Ludwig and Virchow were doing their work, the association between medicine and physiology had been intimate. With the prominence of pathology and bacteriology, however, the two had been somewhat divorced, but it was gratifying to see surgeons again coming back to physiology. The problems in surgical physiology

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were, however, very difficult ones, and were not to be thought of as simple, for they depended ultimately on physiological fundamentals, and these were difficult for even specially-trained physiologists to master.

Partial Occlusion of the Aorta.—Dr. Halsted reported some experimental work done by himself and Dr. Sowers on this subject. Ligation of the aorta had been tried 14 times in human beings and had always been fatal. The early experimental work on the subject had been done by Pirogoff, but on account of his septic technique it had not been successful. Dr. Halsted used for ligation a metal band which could be gradually tightened until obliteration was complete. Contrary to what might be expected, no gangrene of the lower extremities occurred, but Stenson's phenomenon (paralysis of the extremities, due to anemia of the cord) was present. As a rule, in time the circulation became completely shut off, but just before this occurred an equilibrium was apparently established between the blood above and that below the ligature, and there were evidences that in some cases the pulse reappeared below after having disappeared. No evidence of clot formation was seen, nor was there any endothelial proliferation in the arterial wall, which was normal except for atrophy. In certain cases the metal band cut through and lay within the vessel, and in one or two cases a semilunar diaphragm formed within the aorta. Contrary to the experimental findings of Lister, no endothelial proliferation took place.

The Blood-Pressure in Different Parts of the Arterial Tree.—Dr. Dawson reported a study of this subject which was undertaken to determine the changes undergone by the systolic, the diastolic, and the mean pressures in passing from the heart to the periphery. The aortic-cephalic, the aortic-trachial, and the aortic-femoral systems of the dog were studied, a cannula being introduced into the aorta and then into the successive parts of each of these systems moving toward the periphery. The various blood-pressures were read in each of these situations. An unexplained initial rise occurred near the heart, the pressure measured at a point nearest the heart being slightly lower than at a point a little distal to that.

Heart-Block in Mammals.—Dr. Erlanger reported experimental work done in regard to heart-block in mammals. Complete heart-block was said to be present when the auricle and ventricle were beating with two independent rhythms, and though a well-known phenomenon in cold-blooded animals, had never been produced in the mammalia. Dr. Erlanger's experimental work started with a study of a case of Stokes-Adams disease in the Johns Hopkins Hospital. It was found, by careful pulse-tracings, that the auricle and ventricle in this patient were beating with differing rhythm. The administration of atropine had the usual effect on the auricular beat, but the ventricular beat did not change, the ventricle being thus shown to be uncontrolled by the vagus. The accelerations were, however, shown to be acting on both auricle and ventricle. During the attacks the ventricles stopped, but the auricles continued to beat, and all these phenomena led Dr. Erlanger to the conclusion that Stokes-Adams disease was ultimately heart-block. He then set about trying to produce this condition in dogs, and was finally able to accomplish this by placing a specially-devised hook clamp between the auricle and the ventricle and suppressing with it the auriculo-ventricular muscle-bundle of His. The study of the case and the further experimental work on dogs showed conclusively that every case of

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Stokes-Adams disease (the rhythm in the neck-vessels differing from the rhythm at the heart, being one of the features described by Stokes) was in reality an instance of heart-block, and a study of all the cases in the literature which have been well observed and by adequate methods confirmed this idea. All the symptoms, Dr. Erlanger said, could not be explained by a lesion of the auriculo-ventricular bundle of His, and there seemed to be neither need nor warrant for calling in the cardiac nerve centers to explain the condition.

BALTIMORE CITY MEDICAL SOCIETY.

SECTION OF CLINICAL MEDICINE AND SURGERY.

MEETING HELD MARCH 17, 1905.

Dysentery of Children.—Dr. J. H. M. Knox showed the pathological specimens of some children who had died with severe forms of this condition. So-called "summer complaint" included, he said, three groups of cases—first, intestinal indigestion following a gross dietary indiscretion; second, gastric-intestinal intoxication, in which nausea, vomiting, and toxic features were prominent; third, enteritis or ileocolitis, in which marked membranous, ulcerative or other lesions were present. The first specimen was from a child who had an ordinary dyspeptic diarrhea with mucoid stools. After a time blood began to appear in the movements, and nausea and vomiting became marked. There was also fresh blood in the vomitus, though the lungs were negative. The course was down hill, and death occurred in asthenia. Widal had been negative. At autopsy discrete, punched-out ulcers were found throughout the intestine, but ceasing entirely above the ileocecal valve. Cultures for typhoid and for dysentery bacillus were negative. The second case was a baby of three months who was admitted in collapse from some gastrointestinal trouble. Some improvement followed treatment, but death soon occurred in asthenia. Marked pyuria had been present, and great numbers of colon bacilli were found in the urine. Autopsy showed caseous glands at the base of the lung and tubercles on the pleura. Three feet above the ileocecal valve was a pseudomembrane lining the entire gut, from which dysentery bacilli were obtained. The third patient had had mucoid stools for several weeks, and at autopsy showed a membranous ileitis, from which dysentery bacilli were obtained. In the fifth case dysentery had been present for two weeks, the stools showed tubercle and dysentery bacilli, and there were signs in the lungs. The bowel showed undoubted tubercular ulcers, besides others in the sigmoid and rectum, thought to be probably dysenteric.

Hyperpyrexia in an Infant.—Dr. Mitchell reported this case. The child had been born healthy and was put at the breast, the mother, however, failing to lactate. On the third day the child's temperature was 100°, on the morning of the fourth day 103°, and that evening 106.6°. In absence of other signs a diagnosis of inanition fever was made, and under milk-feeding and baths the child made a good recovery. The moral of the case was that whenever a breast-fed child shows inexplicable fever inanition should be thought of.

Measles in an Infant.—This patient, reported by Dr. Mitchell, showed fever, coryza, lachrymation, and râles on the seventh day after birth, and a

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few days later a typical measles developed, and was pretty definitely traced to a shawl in which the child was wrapped and which had been used on a measles patient nine months previous.

Rheumatic Purpura.—Dr. Watson briefly reported three cases of this disease occurring in a single block. Dropsical symptoms were present in all.

Book Reviews.

INTERNATIONAL CLINICS. A Quarterly of Illustrated Clinical Lectures and Especially-Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Orthopedics, Pathology, Dermatology, Opththalmology, Otology, Rhinology, Laryngology, Hygiene, and other topics of interest to students and practitioners, by leading members of the medical profession throughout the world. Edited by A. O. J. Kelly, A.M., M.D., Philadelphia, U. S. A., with the collaboration of Wm. Osler, M.D.; John H. Musser, M.D.; James Stewart, M.D.; J. B. Murphy, M.D.; A. McPhedran, M.D.; Thos. M. Rotch, M.D.; John G. Clark, M.D.; J. W. Ballantyne, M.D.; Edmund Landolt, M.D.; Jas. J. Walsh, M.D.; John Harold, M.D.; Richard Kretz, M.D., with regular correspondents in Montreal, London, Berlin, Vienna, Leipsic, Brussels, and Carlsbad. Volume I. Fifteenth series. Philadelphia and London: J. B. Lippincott Company. 1905.

The fifteenth series of this very good quarterly begins with an excellent volume. From the 17 clinical lectures those selected for special mention will naturally be such as concern the reviewer's professional predilections. They are all good. The progress of medicine in 1904 is very well recapitulated by Dr. A. A. Stevens under the head of Treatment, by Dr. Wm. B. Stanton under the head of Medicine, and by Dr. J. C. Bloodgood under the head of Surgery. Periodicals in general pay their subscribers not so much in the number and variety of their contents as in the three or four articles which in the course of a year meets a particular need of the subscriber. For "International Clinics" it may be said that the purchaser is sure of a prize in every package.

ACUTE CONTAGIOUS DISEASES. By William M. Welch, M.D., Diagnostician to the Bureau of Health and Consulting Physician to the Philadelphia Municipal Hospital for Contagious and Infectious Diseases; for 33 years Physician-in-Charge of the Municipal Hospital; Fellow of the College of Physicians of Philadelphia; and Jay F. Schamberg, A.B., M.D., Professor of Dermatology and of Infectious Eruptive Diseases, Philadelphia Polyclinic and College for Graduates in Medicine; Assistant Diagnostician to the Bureau of Health and Consulting Physician to the Municipal Hospital for Contagious and Infectious Diseases; Fellow of the College of Physicians of Philadelphia; Member of the American Dermatological Association. Illustrated with 109 engravings and 61 full-page plates. Philadelphia and New York: Lea Bros. & Co. 1905.

It is one of the merits of this book that it does not attempt to consider all the acute contagious diseases even of this latitude. The diseases consid-

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ered are smallpox, chicken-pox, scarlet fever, measles, rubella, typhus, and diphtheria. The book comes from excellent hands, and is based on the very large experience of the Municipal Hospital of Philadelphia. In a great many journal articles published during the last six years we have learned how well Drs. Welch and Schamberg have improved the opportunities presented by the prevailing of smallpox epidemic, and it is not surprising that the present volume should begin with smallpox and vaccination. There are five chapters on this subject. The question of the value of vaccination should, of course, need no support from modern experience, but many of us have wished for a statistical statement on this subject brought down to these times. Such a statement is found in this volume.

The chapter on smallpox is very helpful in the matter of diagnosis. It is not surprising that the physicians of today are unfamiliar with smallpox. Indeed, it is surprising that they were not oftener at fault.

The chief agent in the wide distribution of smallpox in the United States since 1898 has been the difficulty of diagnosis plus that besetting sin of self-conceit which ties a man to his blunder and to the disaster in its wake. In this chapter on the diagnosis of smallpox the effectiveness of the text is greatly increased by a set of serial photographs showing the successive stages of the eruption in a mild but characteristic case of smallpox. This part of the book is especially rich in well-chosen illustrations.

What has been said of the articles on smallpox may be said of the rest of the book, though the other diseases are less extensively discussed.

NORMAL HISTOLOGY AND MICROSCOPIC ANATOMY. By Jeremiah S. Ferguson, Instructor in Normal Histology, Cornell University Medical College. D. Appleton & Co., Publishers. 1905.

This is a very elaborate work covering over 650 pages, including 462 illustrations. In its arrangement of subject-matter it follows very closely that found in the majority of textbooks on the subject. Considering the size of the work we would have preferred to have seen more space devoted to the study of the cell and the primary tissues. The author calls attention to the fact that the central nervous system has been discussed more fully than one usually finds in a textbook of general histology; we think this is a very commendable departure, and consider this the best chapter in the book. Among the ductless glands we are glad to note a description, though brief, of the parathyroid and carotid glands.

Most of the illustrations are good; some are not so clearly depicted. The reconstruction method has been used in some of the illustrations.

The chapter on technic is short, though, as the author correctly states, this is a science in itself, and one usually refers to special works for details.

The print is large and clear, a matter of considerable importance to the student.

We do not hesitate to recommend the book.

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MARYLAND MEDICAL JOURNAL.

JOHN S. FULTON, M.D., *Editor.*

Associate Editors:

THOMAS R. BROWN, M.D. | HUGH H. YOUNG, M.D.
ROBERT REULING, M.D. | JOSE L. HIRSH, M.D.

BALTIMORE, JUNE, 1905

FROM EQUANIMITAS TO IMMORTALITY.

DR. OSLER'S unusual power as a public speaker has been developed since he passed his "*crise de quarante ans.*" In recent years he has often brought no manuscript to noteworthy occasions, and many speeches of which there is no record have increased his reputation as an orator. His literary activity during the past 16 years has been astonishing, and, considering the great sum of his varied activities during that time, one wonders whether he has written anything, as Cardan says, "for the fire."

Of his many notable addresses 18 have recently been published in one volume by Blakiston's Sons & Co., and this selection perhaps expresses the author's judgment on his own work. If so, the author's critical judgment is probably correct, but some of those who know him well and like to be counted among his friends set a peculiar value on some of Osler's minor diversions, of which the "Alabama Student" is a good example. This, however, is but another way of saying that one likes a caress better than a sermon. Each of the 18 addresses is, in fact, a sermon, a seasonable gospel for each occasion. The first of them was his address to the graduating class of 1889 at the University of Pennsylvania and his own valedictory to the University. This is entitled "Aequanimitas," and its author must have been a master workman in English composition long before it was written. One would like, indeed, to find in some more recent essay a better art-concealing art, but for the present reviewer at least such a search is vain. It would be delightful to fall upon some youthful extravagance in this the first of Osler's important addresses.

The next address is that to the nurses at Johns Hopkins Hospital in 1891. In this and another, delivered on a like occasion in 1897, the characteristics of good preaching are well marked. They are short, as all good sermons are, and they are heart-searching, as sermons ought to be.

It is interesting to find that the third in chronologic order of these essays contains Osler's first statement of the views which made him a newspaper celebrity in 1905. In his address at the University of Minnesota in 1892 he alludes to himself as an old man, saying, "From one who, like themselves, has passed *la crise de quarante ans,* the seniors present will pardon a few plain remarks upon the disadvantages to a school of having too many men of mature, not to say riper, years," and after describing the deteriorations which, he says, generally occur in the fifth or sixth decade, he concludes: "As we travel farther from the East our salvation lies in keeping our faces

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toward the rising sun and in letting the fates drag us, like Cacus his oxen, backward into the cave of oblivion." In the address at the Army Medical School in 1894 he praised the nomadic life as first among the privileges of an army surgeon. "Permanence of residence," he says, "good undoubtedly for the pocket, is not always best for wide mental vision in the physician."

Among his severer sermons that entitled "Chauvinism in Medicine" is perhaps the most powerful. It was delivered before the Canadian Medical Association in 1902, and is a tremendous invective against nationalism, provincialism, and parochialism in medicine. A brief diatribe against the same offense, characterized by the same name as the besetting sin of the young physician, Chauvinism, occurs in an earlier address on "Internal Medicine as a Vocation," delivered before the New York Academy of Medicine in 1897.

The last essay in the volume is "The Master Word in Medicine," delivered at the University of Toronto in 1903. This is perhaps the best of the 18. The occasion was one to bring out the very best of which the author was capable, and as it ought to be, so probably it is the best of the series. It is in this lecture that he bids his young fellow-countrymen to start at once a bedside library, "and spend the last half-hour of the day in communion with the saints of humanity." In a brief appendix this suggestion becomes more definite under the title, "A Bedside Library for Medical Students," proposing the following 10 books: The Old and New Testament, Shakespeare, Montaigne, Plutarch's Lives. Marcus Aurelius, Epictetus, Religio Medici, Don Quixote, Emerson, Oliver Wendell Holmes' Breakfast Table Series.

"Science and Immortality" was the Ingersoll lecture at Harvard University in 1904. It completes the tale of Osler's important literary adventures, and one may pass on this with the rest the judgment that the whole record ought to be as satisfactory to his first sponsors in medical literature, Johnson, Bovell, and Howard, who are passed, as to Gilman, who is present and to whom Osler's latest volume is dedicated.

In these 18 lectures, representing 16 years of the author's life, the growth of his remarkable powers cannot be marked by the ordinary reader. Dr. Osler had skill and substance to begin with, and the increments of wealth are unimportant. He has been generous, and Oxford may allow him to be prodigal. That, at all events, is what we hope for and expect.

A MISUSE OF COLD IN THE PRESERVATION OF FOOD.

THE letter of Dr. John C. Hemmeter, printed elsewhere in the JOURNAL, brings up a matter of considerable importance in its hygienic relations. Refrigeration is so generally employed in the transportation and storage of flesh foods, and for the great bulk of such foodstuffs is so satisfactory, that we have not been impressed by the limitations of this means of preservation. The use of cold in the preservation of dressed meats is almost free from objection, and dressed meats form so large a part of the materials preserved by cold that its failure in the preservation of fish, and especially of undrawn poultry, has not come prominently into view. In some parts of the country, however, the results of eating cold-stored fowl and fish have been bad enough to attract the attention of sanitarians. At the recent Conference of State and Provincial Boards of Health in Washington Dr. N. K.

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Foster, secretary of the State Board of Health of California, brought up this question as serious enough in his State to call for restrictive legislation. The supply of poultry for San Francisco and for coast cities generally, he said, is drawn from very distant points, and the practice of shipping slaughtered fowl without removing the feathers or the viscera has steadily increased in recent years. Cases of poisoning traceable to the ingestion of such foods have also become so numerous as to leave no doubt that the storage and shipment of undrawn game and poultry ought to be forbidden by law. A representative of North Dakota, Dr. Healy, an ardent sportsman, gave his experience in the preservation of game. He said that in his country game eviscerated immediately after being killed can be kept for several days without refrigeration, but that if evisceration is delayed for an hour or two the meat soon becomes tainted. In autopsy work the consequences of delay are well known, and the promptest exposure to cold often fails to prevent extensive invasion of the tissues by intestinal bacteria.

While Eastern sanitarians were not able from their experience to support Dr. Foster's views as to the importance of the subject, the soundness of his contention was unquestionable, and the Conference passed a resolution condemning the storage and shipment of undrawn game and poultry. The suggestions made by Dr. Hemmeter are probably much more important than the hygienists of this country have hitherto realized. Food poisoning of this sort is rarely reported. Perhaps such cases are rarely recognized, or, if recognized, are not traced to their true cause.

THE JULY NUMBER OF MARYLAND MEDICAL JOURNAL.

BEGINNING with the July number the MARYLAND MEDICAL JOURNAL will begin the regular publication of the proceedings of the Medical and Chirurgical Faculty of Maryland, and so become the authorized representative of the Maryland profession. This is in no sense to narrow the policy or to abridge the influence of the JOURNAL. When we add a line to the title on our cover page saying that the JOURNAL is the authorized medium of publication for the Medical and Chirurgical Faculty, we shall simply acknowledge formally what in substance has always existed, for the JOURNAL has always been engaged in furthering the interests of the profession, and would have accepted long ago a proposition to acknowledge a particular devotion to the welfare of the Faculty. To be chosen as a vehicle for the organizing vitalizing spirit which animates the medical men of Maryland at this time is no bondage, but a liberty to pursue the common good as if it were one's very own. The progress of medical organization in this country has of late made strides, and in this advance Maryland has kept step. Whether the JOURNAL as such has been a factor in recent progress we dare not say. We have, at any rate, witnessed these encouraging events with the utmost satisfaction and with admiration for the men who have been most active in bringing them to pass.

For the future it is certain that the JOURNAL will wear the insignia of active service, and if the service is good may receive more credit than is due. Therefore, let it be understood that the most difficult part of the work in organization is finished; that things are moving. To keep them moving is not a great task, and not especially our task.

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Correspondence.

FOOD ADULTERATION IN OUR LARGER CITIES.

Baltimore, May 4, 1905.

DR. JOHN S. FULTON,
Editor Maryland Medical Journal:

Dear Doctor—The accompanying clippings from the daily papers, which were sent to me partly anonymously, will give you an idea of the scare that exists, particularly in New York, concerning the adulteration of food. What you say in your editorials for May, 1905, is no doubt correct as far as the integrity and reliability of the loudest present-day champions of pure food are concerned. The exposure of the fallacies of these self-appointed advocates of pure-food law should, however, not lead to the diagonally-opposite fallacy, namely, that there is no danger of acquiring disease by impure food or that food adulteration is not extensively carried on. I have personally entered into the study of this question on repeated occasions, and called attention to the adulterations of food which have been proven to exist even in our city (see Hemmeter, Diseases of the Stomach, third edition, pages 430-431). Food adulteration is really practiced on a large scale, as you admit in your editorials, and it constitutes a real menace to the health of the people.

One of the most harmful changes which is brought about in certain class of foods is that produced by long cold storage. This does not occur practically except in the prolonged cold storage of poultry and fish when stored with the viscera and intestines. Poultry, game and fish, although preserved on ice, will undergo a slow putrefactive change; the muscular part of the animal gradually becomes soaked with toxic substances. If the animal is taken out of cold storage, very few moments suffice for a rapid absorption of toxines by the muscular part of the poultry or fish, as the case may be. I have personally observed numerous cases of sudden and severe auto-intoxication from the gastro-intestinal tract which I could interpret in no other way but that they were due to the ingestion of cold-storage food. Sometimes the animals that are put on cold storage—say in New York city, where there are colossal cold-storage warehouses; in Jersey City, Harlem, and other places—are considerably decayed before they reach the place for cold storage. The immediate environment of such large cities as New York and Philadelphia is simply a complex of smaller cities, and in the case of New York one can say that from the colossal metropolis to Albany in one direction, along both sides of the banks of the Hudson, from New York to Boston along the coast in a northerly direction, and from New York to Philadelphia in a southerly direction, we simply have a chain of larger and smaller cities with insufficient agricultural land intervening to supply the animal and vegetable food for the multitude of human beings within the great cities. Cold storage has therefore become a necessity in order to preserve the large number of killed poultry that comes chiefly from our great West. There can be therefore no question of abolition of cold storage for animal food. In fact, some goods, like beef, mutton, etc., are improved and rendered more digestible by cold storage. This is due to the fact that the carcasses of slaughtered beeves are not preserved in their entirety, and not until the viscera and entrails have been removed. A law should be enforced in the large cities prohibiting the cold storage of poultry, game, and fish still containing the viscera and intestines.

It is very regrettable that the agitation for pure foods is in the hands of unreliable, sensational, and designing men. We would have more progress to hope if the matter were taken up by the Americal Medical Association and handled in a similar manner as the tuberculosis question. I consider that the matter of tuberculosis is exceedingly well managed by national and State societies and boards. There is a borderland where the antituberculosis agitation and the pure-food agitation overlap, for impure food may be infected food, and tubercle bacilli in food are not destroyed by cold storage. Moreover, the most recent experiments concerning tuberculosis, under the supervision of the Bio-Chemic Division of the United States Department of Agriculture, deals with the comparative virulence of human and bovine tubercle bacilli for some large animal. For the infection to take place by means of food (see Bulletin 52, part 2, page 76), no lesion of the intestinal wall is necessary, no epithelial desquamation, no local changes of any character, no previous inflammatory process. Inasmuch as tubercle bacilli can enter the intestinal wall without leaving any trace of their passage, it is impossible to say how many infections of the human organism with tuberculosis may have taken place through the gastro-intestinal canal, for the article quoted makes it plain that the bacilli once having entered the lymph stream

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may become arrested in other places, especially in the lungs, and give rise to the formation of tubercles. In my opinion, the percentage of human beings that have become infected with tuberculosis by way of the intestinal canal is underestimated rather than overestimated, for how can we form a correct judgment of the frequency of intestinal tubercular infection when infection may take place without leaving a trace in the mucosa?

But I am drifting away from the main object of my communication, which was to emphasize the serious nature of the problem that confronts us in food adulteration, that the question should command the attention of the very best of our hygienists. Chemists and physiologists of acknowledged ability should be given charge in a systematic investigation of this problem.

Yours very truly,

JOHN C. HEMMETER, M.D.,

Professor of Physiology and Clinical Professor of Medicine, University of Maryland.

Medical Items.

THE American Röntgen Ray Society will meet in Baltimore at Johns Hopkins University on September 28, 29, and 30. The headquarters of the Society are to be at the Belvedere.

THE semiannual meeting of the Medical and Chirurgical Faculty of Maryland will probably he held at Deer Park, Garrett county, on September 21 and 22. The Deer Park Hotel and the Baltimore & Ohio Railroad have made very attractive concessions in the matters of transportation and lodging.

COLONEL GORGAS, reporting on health conditions at the Isthmus during March, says that there were but 11 deaths in that month among the 9000 employes. This corresponds to an annual mortality-rate of 14 per 1000, which Colonel Gorgas thinks would be considered favorable anywhere. Seventy-five per cent. too high is this death-rate. Considering the ages of the canal employes, an annual mortality of 10 per 1000 would not compare favorably with the mortality of the United States. The very bad practice of guessing at annual death-rates from the experience of a month ought to be left to amateur sanitarians and to great cities like New York and Chicago, where very large numbers keep the variations within manageable limits.

THE governor of Pennsylvania has signed the bill reorganizing the sanitary government of the State on the lines of the New York State Department of Health. The governor is to appoint a commissioner of health at a salary of $10,000 a year, and there are some 10 subordinate positions for other physicians at $2500 a year each. The term of office is that of the appointing governor. As Governor Pennypacker has two more years to serve, the new commissioner may have but two years to serve. It does not so far appear that a first-rate man can be found for the position. The results of such a plan in Pennsylvania, if they are good, will disappoint many people. The varied experience of the United States in this matter of sanitary organization allows a choice of good precedents, but in following New York a bad example was chosen.

THE first annual meeting of the National Association for the Study and Prevention of Tuberculosis was held in Washington May 18 and 19. On the registered attendance on the second morning was 420, and as the registration was casual rather than systematic, it represents much less than the actual attendance. The attendance from Maryland was noticeably large. Among those registered from Maryland were Drs. Wm. Osler, W. H. Welch, W. S. Thayer, W. S. Halsted, H. B. Jacobs, H. W. Buckler, G. Wilson, J. L. Hirsh, E. W. Hyde, C. McElfresh, J. H. Jarrett, G. M. Linthicum, Wm. T. Watson, J. S. Fulton, M. L. Price, W. R. Stokes, C. Hampson Jones, W. L. Lewis, C. H. Willis, H. Keller, T. M. Chaney, L. A. Griffith, J. Page, R. Owensby, Lillian Welsh, Mary Sherwood, C. Buckley, Messrs. John M. Glenn, H. W. Steele and D. Holliday, Mrs. John Glenn, and Mrs. J. J. Abell. Dr. Wm. Osler made his last public appearance at the general meeting on Thursday morning, when he made a brief address as vice-president, speaking on the educational phases of the campaign against tuberculosis. Immediately after the close of the session he took the train for New York, when, on the same evening, he took ship for his new home in England. Among the delegates from Maryland who took part in the meetings were Dr. Wm. H. Welch, who spoke on the channels of infection in tuberculosis, and Mr. John M. Glenn, who discussed a working program for national, State, and local associations for the prevention of tuberculosis.

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MARYLAND
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OCULAR MANIFESTATIONS OF GONORRHEA.

By Hiram Woods, M.D.,

Professor of Diseases of the Eye and Ear, University of Maryland, Baltimore.

READ AS A PART OF A SYMPOSIUM ON GONORRHEA BEFORE THE CLINICAL SECTION OF THE MARYLAND MEDICAL AND CHIRURGICAL FACULTY, FEBRUARY 17, 1905

I SHALL confine my remarks to the prevention of gonorrheal ophthalmia in the newly-born and treatment of the disease in infants and adults. Gonorrheal iritis shall receive only passing mention. It is one of the uncommon forms of iridic inflammation, due, as is usually thought, to direct influence of the gonococci in the circulation upon the iris, and its discussion here would not be of practical value.

Credé's method is the accepted form of prophylaxis against ophthalmia neonatorum. As given in his textbook by the late Dr. Noyes, the method consists in dropping between the lids of the infant a single drop of a 2 per cent. solution of nitrate of silver from a glass rod. I give this minutely because I am sure some of the harm which has resulted from its use in Baltimore has been due to using too much of the solution. One drop is enough to destroy the superficial epithelial layer and the organisms if present. The glass rod secures this amount. Nitrate of silver is a caustic. I have seen at least two infants with extensive corneal scars, without history of purulent conjunctivitis, who had been subjected to repeated instillations of the nitrate solution as a prophylactic. Dr. Noyes states that the immediate effect of the adoption of Credé's method in the Leipsic Lying-In Hospital was to reduce the cases of ophthalmia from 7.5 to 0.5 per cent. Some five or six years ago I made inquiry in our Baltimore institutions regarding its use here. Information thus obtained demonstrated, I think, that the

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safest way is to use it as a routine in all hospital and dispensary confinements. Dr. Whitridge Williams informed me that at first he made an attempt at the Hopkins Hospital to select the cases on a basis of the maternal condition. In 100 confinements he had 7 per cent. purulent conjunctivitis—practically the same as occurred at Leipsic, with no prophylaxis. He then ordered its use in all confinements in the hospital and dispensary services, and in 500 confinements had one case of ophthalmia. From the resident physician of the Lying-In Hospital at the University of Maryland at that time I learned that Credé's method was used "only in those instances where the mother had unusual leucorrheal discharge or gave history of having had gonorrhea." The percentage of ophthalmia (9.8 per cent.) was worse than that furnished by Dr. Williams before he adopted the Credé method as a routine. No figures were sent me at the time of this investigation from the Maternité of the City Hospital or the Maryland General. It was evident, however, that at both these institutions experience had taught the danger of trusting the discretion of those in charge of hospital or dispensary births, and had forced the routine use of the Credé method. Within a few days I have obtained the following information regarding the custom at the four largest clinics in Baltimore: At the Hopkins Dr. Williams employs Credé's method in all deliveries. There has been during the past year between 1 and 2 per cent. of ophthalmia. The same method is used in all cases at the Maternité by Dr. Dobbin of the City Hospital and by Dr. Rowland at the Maryland General. The former reports no ophthalmia in the last 200 successive deliveries, the latter one case in 150. At the University of Maryland a 50 per cent. solution of argyrol is used in the indoor service instead of the nitrate of silver, while the latter salt is still used in the outdoor service because it is cheaper. There were four mild cases in 192 deliveries after the use of argyrol, nearly 2 per cent., while in 366 cases in the outdoor service, with poorer hygienic surroundings, there were but three ophthalmias, less than 1 per cent.

The facts that nitrate of silver is a caustic, that it is an irritant; that lid edema and conjunctival catarrh, sometimes of stubborn nature, frequently follow its use in the tender eyes of infants, and, further, that a very few cases of serious and one or two of fatal hemorrhage from the conjunctiva have been reported, have led to attempts to substitute some other agent. Howe of Buffalo looked into this matter a few years ago and found that the only agent which approached the nitrate in efficiency was corrosive solutions in the neighborhood of 1-1000. But corrosive solutions of sufficient strength to do good were also irritating, and many of those who have tried them, including Widmark, Fleischauer, and Oldhausen, had returned to the silver salt. I was told not long since by my friend, Dr. Dickerson of our own State, that for many years he had used in a large country practice a 1-5000 solution of bichloride, and that while he could not give figures, he had not

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seen ophthalmia for years, and had very little irritation. While such observations are found here and there, the weight of opinion is in favor of silver. Some obstetricians have placed their reliance on disinfection of the maternal genitalia. In a recent personal communication my friend, Dr. E. P. Davis, professor of obstetrics at the Jefferson College, Philadelphia, says that instead of Credé's method, "all hospital and dispensary cases receive a preliminary vaginal douche of tincture of green soap and lysol, or crealin 1 per cent., with thorough external cleaning. At the moment of birth the child's eyes are cleansed with boracic-acid solution, saturated." He cannot give his exact figures, but he believes he has had not over 15 cases in the last 500 labors. This is 3 per cent.; more than is observed with Credé's method. I think, without being able to speak authoritatively, that obstetricians generally no longer rely on maternal disinfection for safeguarding the infant's eyes.

The most interesting question, however, at present is the comparative prophylactic efficiency of nitrate of silver and the new silver salts, protargol and argyrol. In the "Ophthalmic Yearbook" for 1904 Edward Jackson says: "Veverka has employed protargol to prevent ophthalmia neonatorum. He uses the 20 per cent. solution, and claims better results than have been afforded by Credé's method." Argyrol, Jackson thinks, will, on account of its lesser irritating qualities, attain greatest popularity, but "experience with it is not yet extensive enough to establish its value, and its reputation seems to rest as much upon what has been claimed for it as upon what it has accomplished."

With the view of answering, if possible, the question raised by Jackson, I wrote recently to some men asking what experience, if any, they had had with these new silver salts as a prophylactic. In Baltimore only at the University of Maryland had inquiry been made. As stated above, argyrol has been used in the indoor and nitrate of silver in the outdoor departments, with the showing in favor of the old remedy. Again, the figures given me by Drs. Williams, Dobbin, and Rowland, who used the nitrate in all cases, indicate results, in Williams' report, just as good as were obtained at the University of Maryland by argyrol. In the other reports the percentage of cases with the nitrate was smaller. So, from our local experience, admittedly small, it seems that the old remedy is superior. Dr. Arnold Knapp of New York writes: "At the Sloan Maternity Dr. Craigin tells me that they are perfectly satisfied with the substitution of 10 per cent. argyrol as a prophylactic, preferring it to protargol. It is as efficacious in their experience and much less irritating." From this I should judge that the Sloan Maternity had first substituted protargol for the nitrate and then gone to argyrol. No figures are given. At the Boston Lying-In Hospital Dr. Furrer, house physician, writes that up to a few months ago a 2 per cent. protargol solution was used, but that for nearly a year a 25 per cent. solution of argyrol has been employed. They have not had a severe ophthalmia in the indoor service for a long time, but occasionally have a case in the out-

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patient department. The Doctor is unable to give statistics, because gonorrheal ophthalmia, acting on the advice of Dr. de Schweinitz. "in the hospital they almost never see a gonorrheal ophthalmia, and the out-patients are not followed."

The reply of Dr. Hirst of the University of Pennsylvania is so striking in its commendation of argyrol that I present it in full. He says: "I use nothing but argyrol as a preventive treatment of gonorrheal ophthalmia, acting on the advice of Dr. De Schweinitz. We use it continually in hospital and dispensary practice on account of the frequency of gonorrhea among that class of people. In my private practice I use no methods unless I know that the woman is infected, but I find gonorrheal infection among women of the best class to be exceedingly rare.

"Since using argyrol in a 25 per cent. solution I have diminished the proportion of ophthalmia cases in the hospital to between 1 to 3 per cent. of the infants born out of a total service in the hospital and dispensary of 900 to 1000 cases a year. Without looking up the records, which would take considerable time, I should say we had less than a third of the cases of ophthalmia with argyrol than we used to have with nitrate of silver as a preventive treatment, but this may be a mere coincidence, as we have only been using argyrol a couple of years. Before applying argyrol we used protargol in place of nitrate of silver, but I should say from clinical observation that the argyrol was much superior to either. Another great advantage we find from using argyrol is that we escape the irritative conjunctivitis which we often got from nitrate of silver instillation, although but a single drop of 2 per cent. solution was used, and we immediately washed it out with salt water. Nevertheless we had a large number of cases of irritative conjunctivitis which for a day or two would look very much like actual ophthalmia."

Dr. de Schweinitz writes me that at the University of Pennsylvania the custom is as given by his colleague, Dr. Hirst, but that he suspects "that in any case of known infection, that is to say where examination had shown prior to birth that infection existed, they would use a full Credé method; am not quite sure of this, however, but am sure that is what I teach."

It is not easy to deduce from the foregoing a dogmatic conclusion regarding the comparative reliability of the full Credé method and the use of the newer salts. In Baltimore, where alone *figures* have been obtainable, the showing is decidedly in favor of the old remedy. The carefully-prepared comparative statistics furnished by Drs. Zepp and Chewing from the University of Maryland indicate this as between nitrate of silver and argyrol. The teaching of these figures, too, is evidently supported by de Schweinitz. On the other hand, in three large services argyrol has supplanted the older remedy, and is regarded as equally reliable and safer because freer from irritation. I have seen so many cases of stubborn purulent conjunctivitis, apparently non-gonorrheal, after overzealous use of the nitrate, that I am inclined to agree with Dr.

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Hirst in the importance he attaches to the irritative effects of this salt. He has used is correctly. Argyrol does not produce these cases, and there is not the same necessity of exactness in dosage. These "irritative" cases are not very common, and while disagreeable and tedious, are not dangerous. To me it seems unsafe, in order to lessen the danger of their occurrence, to give up a remedy which, from statistics, has greater preventive efficacy. Before the question can be definitely settled it will have to be studied from a point of view somewhat different from that presented in this paper. There must be a comparative study of the prophylactic efficacy in babies born of mothers with known gonorrheal infection.

Concerning the disease when established I shall speak only of its treatment. The most important thing is to get hold of the case early. In this connection the law enacted by our legislature of 1894 has brought about excellent results. The old picture of babies two or three weeks old with sloughed corneae brought to the hospital after time wasted with chamomile tea, breast milk, etc., is no longer seen. The four or five prosecutions which some of us instituted during the years 1895 and 1896 were not in vain. Midwives seem to have learned their lessons, and we generally now get hold of the cases during the first 48 hours. Though I am personally on the constant lookout for cases meriting prosecution, I have not seen one for several years. As is well known, nitrate of silver has been the chief therapeutic agent in the treatment of ophthalmia neonatorum for many years. On account of its irritative qualities it has doubtless produced in not a few instances thickening of the lids and deep congestion which have aggravated otherwise mild cases. Arlt has urged the systematic examination of the pus for the gonococcus before employing the nitrate of silver, and the use of this remedy only when the organism is found. Since we have had argyrol, which seems to be free from the caustic and irritating qualities of the nitrate, we do not, so far as my experience goes, see so many of these cases, which, without impairment of the cornea, drag themselves along through weeks or months. Is argyrol as efficacious in curing the disease as is nitrate of silver when its gonorrheal origin is certain? This important question seems to have been conclusively answered by Dr. Myles Standish of Boston in a paper presented in June, 1904, to the American Medical Association and published in the Association's journal December 17, 1904. Dr. Standish insists upon all babies brought to him being left in the hospital. He has isolation wards with special nurses. His method of treatment, which he kindly showed me when I was in Boston two years ago, "consists of washing the lids with a solution of boric acid once in half an hour, to put when necessary a little vaseline along the lids to prevent them sticking together, and to instil a solution of protargol or argyrol freely between the lids at intervals from every hour to once in four hours." He does not employ any method of removing the pus mechanically from between the lids. Apparently he re-

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gards, as I certainly do, the old method of wiping the pus from between the lids with cotton on the end of a probe or toothpick as a very dangerous procedure. "The heavy protargol or argyrol solution sinks to the bottom of the *cul-de-sac* and floats to the surface the pus or mucus which has accumulated." No case is discharged from the hospital until two cover-slip preparations have demonstrated the absence of the gonococcus. Dr. Standish gives in the paper mentioned records of 50 cases treated by nitrate of silver solution. Of these there were three with clear corneae on admission which subsequently developed ulcerations sufficient to interfere with vision—6 per cent. of unsuccessful cases. One hundred and fifty cases were treated with protargol. Three of these with clear corneae in the beginning developed ulcers injuring or destroying sight—2 per cent. of unsuccessful cases. He first used the protargol in a 4 per cent. solution, increasing it later to 20 per cent. and 50 per cent. All babies treated with the latter solution recovered. He also treated 64 cases due to gonorrheal infection, with clear corneae on admission, with argyrol. Not an eye was lost. There were admitted into Dr. Standish's service also nine babies with hazy cornea and nine with corneal lesions. One case of the former developed an ulcer and one eye with corneal lesion on admission was lost. These 18 were treated with argyrol.

At the Presbyterian Eye and Ear Hospital protargol, from 2 to 20 per cent., and argyrol, from 10 to 50 per cent., have for the past two years been used in the treatment of gonorrheal ophthalmia. I have not lost a single eye with clear cornea on admission with either agent. My entire experience in the loss of eyes in ophthalmia neonatorum amounts to two cases. Both occurred several years ago. They were treated with nitrate of silver, and I am unaware of any explanation for their loss, save that the nitrate of silver did not control the infection. I am by no means convinced that when I have had as large an experience with the new agents as I have had with nitrate of silver this small percentage of loss will be less. De Schweinitz (personal letter) is of the opinion that "nitrate of silver, properly applied by skilled hands, properly neutralized, with all caution that it shall not injure the corneal epithelium or that the corneal epithelium shall not be injured during manipulation, is just as efficacious as the newer salts, but more disagreeable." Comparing protargol and argyrol, I have been much better satisfied with the latter. In a certain number of cases protargol seemed just as irritating as the nitrate. The irritative qualities of this remedy are very variable. Sometimes it causes no pain, and again a great deal. I could not see that it shortened the cases materially. I used 10 per cent. and 20 per cent. solutions. But I am sure that argyrol does shorten the cases. I have never seen it cause irritation, and have used it as strong as 50 per cent.

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A case recently under care illustrates its prompt action. A baby with gonorrheal ophthalmia was brought to my clinic on the 3d of February. The lids were edematous, discharge profuse. Twenty per cent. argyrol solution applied every four hours put a stop to the discharge in three days. Then, by way of experiment, the silver solution was discontinued. In three more days the eyes were full of pus. Argyrol was again employed, and in 48 hours edema had largely disappeared and the discharge reduced to a few drops. This case illustrates the truth of Standish's contention that treatment must not be discontinued until the gonococci have disap-

all were discharged with leucomata. No eye was totally lost. Of 14 there in the spring of 1904. Nine of them were infants; one child was seven years of age. The strength of the argyrol solution varied from 25 to 50 per cent., the latter being employed only two or three times a day, and the former more frequently. Gonorrheal infection was proved in each case. All were admitted with clear cornea and all recovered. The shortest period of treatment was 4 days, the longest 16 days. This is a great saving of time as compared with nitrate of silver or protargol. I think we are justified in concluding that in ophthalmia neonatorum argyrol is just as efficient as either nitrate of silver or protargol, less irritating than either, and saves a great deal of time and pain.

Time does not permit me to enter at length into the treatment of the gonorrheal ophthalmia of adults. As Standish remarks, it is, after all, however, in *adult* ophthalmia that any remedy finds its crucial test. In Standish's experience the percentage of cures with protargol and argyrol, when the cases were admitted with clear corneae, were 66 per cent. and 69.5 per cent., respectively. This shows very little difference in the efficiency of the two drugs. Of 16 cases with corneal lesion on entrance and treated with protargol, all were discharged with leucomata. No eye was totally lost. Of similar cases—that is, with corneal lesion on entrance—and treated with argyrol, five eyes were lost. From this Standish offers the conclusion that protargol is probably more efficacious in controlling cases with corneal lesion on admission. He obtained his best results with a 10 per cent. solution of protargol and 15 to 25 per cent. solutions of argyrol. Two cases of my own seen in private practice recently demonstrate, first, the value of the microscope in diagnosis; secondly, the advantage of argyrol on account of its non-irritating qualities. Two young men applied with what was apparently a rather severe mucopurulent ophthalmia. If gonorrheal in origin, neither case had yet reached the stage of thick, creamy secretion with succulent lids, when, according to acceptable authority, nitrate of silver is indicated. On the contrary, the lids were somewhat indurated. Cover slips from each case showed gonococci. Argyrol was used in 50 per cent. solution, and both

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cases were cured within a week. I do not believe this would have happened with nitrate of silver, for its use during the stage of induration with scant secretion has with me been usually followed by an increase in the edema. From the lessons taught in Dr. Standish's paper and my own experience with protargol and argyrol I am led to believe that argyrol should be used in cases of gonorrheal ophthalmia as soon as the diagnosis is made, irrespective of the condition of the lids, the amount or quality of the secretion. But if, in spite of its use, the case does not show improvement in a few days, I should have recourse to nitrate of silver. Argyrol seems to me to do its best work within a few days.

I have omitted one of the claims made for these new silver salts—called by Jackson a "specious argument"—that they have more penetrating power than the nitrate. Whether or not this is susceptible of proof I do not know, but the power of the nitrate in small quantity and weak solution to destroy the epithelium, under which and in which the organisms are, for the most part, found, makes this claim of doubtful strength. It seems to me that these salts, argyrol especially, have a right to rank as the first remedy on account of their non-irritating qualities and the clinical proof, of which there now seems abundance, that they can control the infection, and do not cause the dangerous induration which sometimes follows the nitrate if used early. Then, again, argyrol causes practically no pain, and saves the surgeon the dangerous temptation of employing cocaine to allay the burning of the nitrate, for cocaine, by exfoliating the corneal epithelium, opens the way to infection of the cornea.

There are other interesting factors in the treatment of this disease, but of only one more have I time to speak. I have never been able to satisfy myself that the time-honored use of cold applications in the early stages did anything but relieve pain. This they do for a time, though continuous application of cold after awhile causes pain. Standish quotes Neisser as authority for the statement that the temperature must be reduced to 86° F. to inhibit the growth of gonococci. Standish kept ice compresses on one of his cases continuously for 22 hours and took the temperature in the conjunctival sac during the applications. Before the applications the temperature was 100°, during the application 98°, and after the removal of the ice 99.5°. He also used cold in connection with certain of the cases treated by protargol or argyrol and omitted it in others. The percentage of cures in cases admitted with clear corneae and in whom cold was used was 59. There were 17 such cases. Thirty-eight cases, also admitted with clear corneae and subjected to same treatment, save that cold was omitted, showed a percentage of recoveries of 74. The author does not make the specific claim that the use or non-use of cold accounted for this difference, but the difference is, all the same, worthy of note.

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THE WORK BEFORE US.

By H. O. Reik, M.D.,

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ADDRESS OF THE PRESIDENT, DELIVERED AT THE SEMIANNUAL MEETING OF BALTIMORE CITY MEDICAL SOCIETY, APRIL 4, 1905.

I AM sure you will permit me to take advantage of the first opportunity I have had to thank you for and to express my deep appreciation of the honor you have conferred upon me in electing me to the presidency of this Society. As a reward the honor is so far beyond my just deserts that I cannot for a moment suppose you meant it for a personal decoration, and the only reasonable explanation I can find lies in the assumption that you desired to express approval of the reorganization work which has been going on and in which I had the pleasure of playing a somewhat prominent, if unimportant rôle. Perhaps I may also be justified in the further conviction that you wished by such action to imply that this work should be pushed farther toward its logical conclusion. It is with that feeling that I accept the duties of the office, and promise to give you during my term of service my very best efforts for the development of the Society and the advancement of local professional interests.

It appears to me that the time is opportune for a new departure in our local medical-society work, and that this Society is the proper place for the introduction of at least one of these reforms, a feature, the adoption of which, is rich in promises of the beneficial results which may accrue to the profession at large. Doubtless you have all noticed that the program for the evening contains no strictly medical paper. During the past six months the five special sections of this Society have held regular meetings, and I am informed that the average attendance has been larger than usual and the character of the scientific work presented of a high degree of excellence. Considering that the annual convention of the State Faculty is to be held within the next few weeks, and that its program includes a list of papers dealing with matters of science, it was deemed wise to avoid the possibility of a surfeit of such good things and to devote the evening to the consideration of some of the business problems that confront us.

Article II of the constitution of the Medical and Chirurgical Faculty of Maryland states that the purposes of that society are, among other things, "to secure the enactment and enforcement of just medical laws; to promote friendly intercourse among physi-

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cians; to guard and foster the material interests of its members, and to protect them against imposition;" and the plan under which this, the largest branch of the State Society, was organized contemplated that at least one meeting during each year should be set apart for the discussion of the business affairs of the profession with the view to adopting the best methods for the guidance of all.

That is sufficient legal justification for my action in selecting the topics of discussion for this evening, but some of you may question the wisdom of discussing the commercial aspects of our life and prefer to cling to the old plan which ignores or repudiates any suggestion that the practice of medicine is in any way related to business. I confess my utter inability to understand the singularly delicate sentiment against the propriety of discussing this subject in medical societies. For my part I consider the objects of organization referred to as equally important with those others which relate more particularly to the advancement of science. May the day never come when the profession shall be dominated by commercialism, but I trust the day will speedily arrive when both the profession and the public shall realize that "the laborer is worthy of his hire." All honor to the self-sacrificing medical men of the past, the present, and the future. Let us maintain all the highest ideals of the most honorable and the noblest profession the world has ever known. But let us not forget that life is worth the living for doctors as well as for other people, that the grocer and the butcher charge the physician the same rates for food as are imposed upon other customers, and that the youngest member of the profession has the right to expect something more than kind words when he enters our ranks.

It has been estimated recently by someone interested in labor statistics that the cost of such a preparation for the practice of medicine as will give a man good standing in the profession is approximately $6000. If no post-graduate hospital service be taken, this may be reduced to possibly $4000. It is said upon the same authority that the average annual income of the doctors in this country is about $750. I know it draws upon your credulity at first to believe the last statement, but if you will look into the matter at all deeply you will find that it is not far from the truth. I suspect that it fits Maryland fairly well. Now, think what that means. An invested capital of $6000, a life of total abnegation, an income which is less than that of the brick mason, the carpenter, or the plumber's assistant, none of whom have any capital invested, take any responsibilities, or work more than eight hours a day. You and I may be well satisfied with our personal success and happy in the possession of a reasonable income, but what of our brothers? Can we do anything to help them, anything to raise the average of success, and if we can, is it not just as much our duty to do so as to be striving continually to benefit the public which shows little gratitude and less consideration for our welfare? However great our interest in science, however much we may be willing to sacrifice ourselves and our professional

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interests for the benefit of humanity, it remains a fact that for nearly all of us the practice of medicine is at the same time a business enterprise. It is perfectly proper that we should give attention to the business features of our daily work and that we should organize to protect our business interests. Having done so, we should not forget that the success of any business is gauged by the excess of its receipts over its expenditures, and the success of a medical society may be gauged by the same standard, with allowance for the benefits received from the instructive features of an educational program.

The consideration of all the business problems that affect the physicians individually and collectively is not possible in one evening, so I shall attempt to attract your attention to only a few of the more important ones which confront us now or are likely to demand our concern in the near future.

One of the most important questions before the profession of the country at the present moment is that of maintaining the new organization in a state of effectiveness. Those who have been actively interested in the formation of county societies have realized from the beginning that the great task would lie in sustaining a working interest in these bodies. It is not sufficient for us to be able to say that every county in the State of Maryland has organized a local medical society. If left to themselves a considerable number will die in less than a year, and it is doubtful if more than one-fourth of them can live through a period of five years. The inclination to fellowship and harmonious society work is not very strong in the large cities, and it is exceedingly weak in the rural communities. How can we overcome this inertia? How can we stimulate an interest in medical socialism and bind the individual members of the component societies to the State Faculty, and make everyone feel that he is really an important factor in the new machine and that it is greatly to his personal profit to keep up a close connection with his professional brethren? In Baltimore, the library fills this function better than anything else possibly could, but the 400 or 500 country members of the Faculty feel that they get little or nothing for their annual dues, and that there is nothing tangible about their relationship to the State and national associations. Experience has taught a number of our sister States that the strongest influence for good has been a State medical journal, owned and controlled by the State society, managed solely in the interests of its members, and sent to each of them regularly without cost beyond their dues. This plan has now been tried in 14 States, and so far as I can ascertain has been successful in every instance. At the last semiannual meeting of the Faculty, held at Ocean City, I submitted a proposition to the House of Delegates that the Medical and Chirurgical Faculty should either adopt this plan or make some arrangements with the MARYLAND MEDICAL JOURNAL whereby the same ends could be accomplished. A committee was appointed to investigate the matter thoroughly and to report their conclusions at the coming annual meeting.

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This is not the time to present the details of that committee's work, but I am authorized to say that the committee will report in favor of establishing a journal of our own, to be managed on the highest ethical principles, to replace the volume of *Transactions* which has been heretofore published annually; to supply the members with all the news items of interest from the several counties of the State and the country at large, in addition to the scientific papers read before the Faculty and its component societies and sections, together with the business transactions of the House of Delegates, and to furnish all this without cost to the members. It is calculated that this can be done not only without increased expense to the State Society, but that very probably there will be an actual saving to that body.

To each of you this will mean that for your $7 per annum you will receive membership in the Baltimore City Medical Society, with the privilege of participating in all the various section meetings; membership in the Medical and Chirurgical Faculty of Maryland, the free use of the excellent medical library of the Faculty, which alone saves you many dollars a year in new books and journals; and, a monthly medical journal which can easily be made to take the place of one or more for which you now subscribe. But that is not all. I have another proposition to make which will add very materially to the benefits derived from this investment. Perhaps you have all felt the need at some time of protection against malpractice suits. Not that all of you or any of you have been guilty of malpractice, but you have seen how easy it is to ruin a doctor's reputation and business prospects by a trumped-up charge of neglect or ignorance. A large number of you have been paying from $15 to $20 a year to insurance companies to defend you in the event of such a difficulty arising. Now, this is another instance of the doctor being caught between the upper and nether millstones. On the one hand stands the viciously-inclined former patient; on the other the insurance company that grabs $20 a year for doing, in the vast majority of instances, nothing. The chances of your being prosecuted for malpractice have been worked out to a mathematical basis. It appears that among reputable physicians one in every 150 is sued or threatened with suit annually, or, to state the proposition conversely, each doctor is likely to be threatened with suit once in every 150 years of his professional life. Inasmuch as very few of these suits ever come to actual trial, and "a study of malpractice suits reveals the fact that not even 1 per cent. of them possesses any real merit, and that in more than 99 per cent. of the cases the motive was either a desire to avoid payment of a bill, or an effort to extort money, or a cowardly attempt to secure revenge," and the first suggestion of fight stops the process, you can figure out the insurance company's probable profits.

Ten years ago the British Medical Defense Union of England was formed, and it has provided its members with protection at the charge of $2.50 per year, and made money by so doing. About

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two years ago the New York State Medical Association, following the successful example of the New York County Association, decided to take up the defense of its own members. The result has been most gratifying. The last published report of the County Association's legal adviser says: "It must be of interest to the members of this organization to know the absolute and perfect success which has resulted from the defense of malpractice actions brought against members of the Association throughout the State. * * * Not a single litigant up to date, after finding that the New York State Medical Association is behind the doctor who was being sued, has had the courage to bring the case on for a trial. As the members know, there are two kinds of malpractice-suit threats which are used by patients under the guidance of shyster lawyers—one is the outright claim for damages and the other is the kind used for the purpose of avoiding payment of the doctor's bill. The latter is, perhaps, the most frequent, and yet comes to light very seldom. * * * The Association defends against this class of malpractice suits quite as readily and as willingly as against the regular, well-known blackmailing variety."

The Chicago Medical Society has had a similarly successful experience. The Michigan State Medical Society and the Pennsylvania Society have both had the subject under favorable consideration during the past year.

The adoption of such a plan in Maryland will provide every member of the Faculty with the best possible form of protection without cost to himself and without material cost to the Faculty. The State Faculty needs the services of an attorney for other things, and his compensation can easily be secured without taxing the resources of the general treasury. As a business proposition this means of self-protection is well-nigh perfect. The mere knowledge of our intention stops most suits, a little activity prevents more, and should one come to trial we have a corner on the expert testimony.

A question which I think should receive the most careful attention of this Society and of the Faculty relates to the enforcement of the act regulating the practice of medicine. I turn to this subject with trepidation, and before proceeding further wish to make one point perfectly clear. I have not the slightest desire to weaken the existing law nor to prevent its strict enforcement. I am heartily in favor of a law regulating admission to the profession, of a board of examiners that shall pass upon the qualification of candidates, and a law which shall carry punishment to those who evade its provisions. If I complain of existing conditions, it is on the ground that the present law is either inefficient or it has not been properly enforced, and because I am of the opinion that those who have had the matter in charge have overlooked or forgotten the main purpose of the law's enactment. If I remember rightly, the original act of 1892 was asked for as a means of safeguarding the public from the ignorance of the incompetent and the wiles of the unscrupulous pretenders to the title of doctor. The framers

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of that law desired to accomplish two particular objects—first, to eliminate as many as possible of the quacks and charlatans, or at least to prevent any increase in their number, and, secondly, to raise the average of intelligence, ability and skill in the recognized legal practitioners of the art by compelling the medical colleges to improve their teaching methods in order to equip their graduates to reach a higher standard of excellence that should be set by the special examining board provided for. The various changes that have been made in the law by the several sessions of the legislature since 1892 have in no sense altered these original purposes. They are as clearly and distinctly expressed in the present act.

What has been the result of 12 years' experience with our medical-practice act? Within that time the whole course of medical education has changed, and it is not necessary to consider at this moment what proportion of that alteration is due to the passage of laws providing for a special examination of graduates. The medical colleges have met the requirements of the law and the exacting demands of the profession in a way that, on the whole, deserves the highest commendation. The medical student of today has a far better opportunity to acquire a working knowledge of the science than he had in my day even, and the knowledge and ability possessed by the average graduate of medicine today is probably much higher than it was 10 years ago. But what is to be said of the other side of the question? Has the number of charlatans and impostors been reduced? By no means. The number is actually increasing day by day. The law is being violated openly and flagrantly. The holder of a diploma from some unrecognized school and the poorly-equipped graduate of some good college who through good fortune succeeded in squeezing through the examination there, but dreads the test of the Board of Medical Examiners, as well as the fakirs, snap their fingers in the face of the Board and proceed to practice in defiance of the law. I have carefully scanned the published reports of the several Boards appointed since 1892, and can find but one reference to any attempt to enforce the law against illegal practitioners of medicine. On the other hand, every report lays stress upon the work of the Board in regard to examining regular graduates. After four years of arduous labor in the college and the expenditure of a large sum of money, after meeting all the requirements as to preliminary education, moral character, attendance upon lectures, clinics and laboratory instruction, and the passing of examinations, the honest graduate of a medical college, bearing a diploma which certifies to his fitness for professional duties, if he wishes to enter the profession with head erect, is compelled to submit to the extra burden of another special examination. Such a man the law reaches; those I have previously described it does not touch. In short, gentlemen, the net effect of the administration of the law amounts to persecution of the college graduate instead of prosecution of the charlatan.

Once again let me say that I heartily endorse the principle upon

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which the law is based, and that I have absolutely and unqualifiedly no fault to find with the personnel of the present Board. I enjoy the privilege and the pleasure of the most friendly relations with every member of the Board, but the abstract question of present conditions governing the right to practice medicine in the State is one in which we are all interested and have the right to discuss in an impersonal way. If the existing law is a good one, let us see that it is enforced; if it is not the duty of the Board of Examiners, or if for any sufficient reason it is not practicable for that body to conduct a campaign against the violators of the statute, then let us provide the proper facilities for a vigorous enforcement of the law. If, on the other hand, the law is defective, let us ascertain that fact and proceed to try once more to secure a law which shall be effective. That such a thing is possible is evidenced by the experience of New York, Illinois, Kentucky, and other States.

While considering the necessity for proceeding against the irregulars it might not be amiss to give some attention to the putting of our own house in order. Some steps should be taken to discourage the appearance in the newspapers of reports of medical and surgical cases with the names of the attending physicians. Sometimes these reports are acompanied by detailed descriptions of the serious nature of the disease or the miraculous operation performed for its cure. Such things cannot but be derogatory to a man's professional dignity, and it is doubtful if the individual so advertised ever profits materially by it. I cannot believe that there are many men in our midst who would try to secure or who would connive at the publication of such reports, but we should make it impossible for the intentional advertiser to make use of the press in this way, and should protect the innocent, as far as possible, from the perniciously active reporter. As a rule, the responsible parties in a newspaper office will respect the request of a physician not to publish his name in connection with medical cases the histories of which come to them through other channels. The New Orleans Medical Society has set us a good example perhaps in the adoption of the following resolution: "Copies of all articles appearing in the daily press of this city relating to the members of this Society shall be placed by the secretary in a scrapbook, which shall be kept on the president's desk for the inspection of all members. Any member whose name shall appear therein will have the privilege of attaching thereto a written explanation." The *Medical Age*, commenting on this, says: "This seems to be an excellent idea, for while a physician may now and then find his name in the daily papers, when it occurs with such regularity as we sometimes see it, it will be pretty hard to explain that it got there without any help from himself."

In this connection we might consider the advisability of trying to have some of the most objectionable medical advertisements removed from the daily papers. The advertising columns in several of our Baltimore papers are a disgrace to any civilized community. In some instances good results could probably be ob-

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tained by an earnest appeal to the editors and business managers; in other cases legal proceedings might well be thought of. Someone recently raised the question concerning the usurious loan companies, whether the paper that advertised the fraud was not guilty of assisting in the game of obtaining money under false pretenses. He might have asked, and with some show of reason, whether the paper that persists in advertising a known abortionist is not an accessory before the crime.

Another question which, if it does not require immediate action, may still well be taken into account is that of the great increase in the number of hospitals, and the effect of hospitals and dispensaries upon the outside physicians and upon the public. The development of the county hospital is a perfectly natural step in the evolution of the hospital treatment of disease. Its appearance is unquestionably a blessing to some districts, and I am personally of the opinion that much of the good surgical and medical work of the future is to be done in these small institutions. When one considers the benefit conferred upon the community and the elevating influence upon the local profession he may be inclined to wish that every town and village could have a hospital. But there is another side to this question. A hospital is always an expensive luxury; a hospital that is not clearly needed is a useless extravagance. There can be no doubt that a few hospitals distributed over this State at points remote from its metropolis, or not connected therewith by suitable transportation facilities, may render good service to the people and can be afforded by the State. But there is no justification in this for every county-seat demanding its own hospital. The taxpayer has a right to fair treatment for his pocketbook as well as for his appendix. According to the published report of one of these small hospitals situated in a town not far from Baltimore and within easy reach by railroad and steamboat service, the work of 1904 consisted in the treatment of 50 patients at a cost of $3500—an average of $70 per patient. The governor of Maryland is now investigating the whole subject of State appropriations to charitable institutions, and it is within the realm of possibilities that the next general assembly may be provided with considerable information regarding the needs of the State and its ability to furnish and maintain hospitals. It behooves us to be well posted on the subject also and to determine how far we will go in the endorsement of this movement. Furthermore, we may profitably consider whether or not some restrictions should not be placed upon the hospitals and dispensaries that do exist.

The subject of dispensary abuse is one that I hesitate to open, and I do so only to suggest that it is worthy of the most careful consideration, and that you might appoint a carefully-selected committee to investigate the subject as it applies to local conditions. The *Boston Medical and Surgical Journal* for March 16, 1905, contains a most interesting account of a meeting of the Suf-

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folk district branch of the Massachusetts Medical Society, held at the Boston Medical Library, at which meeting the entire evening was devoted to papers and discussions relating to the abuse of medical charity. I cannot give you this evening an abstract of that report, but I can assure you that the reading of it in its entirety is well worth while. The whole subject is perhaps most succinctly stated in the following paragraph from the paper of Dr. Gay: "The results of the present-day method of conducting some of our most important medical charities have convinced many persons of large experience that the work is not carried on in the best manner for all concerned; that they are not managed on sound business principles; that too much gratuitous work is being done by the hospitals and dispensaries and their physicians; that too many people who are able to pay for the necessary care and treatment resort to the free clinics; that in consequence of this custom the intention of the founders and supporters of these institutions is violated; that the physicians are wronged by being required to give their time, strength and skill to those who can well afford to pay for them; that the outside physicians are being robbed of legitimate work which they are fully competent to do, and, finally, that as this abuse has become flagrant in many instances, and is increasing, the time has come when an earnest effort should be made by the profession to correct in some measure the present unfortunate state of affairs."

It was the conclusion of the Boston meeting that the profession is more or less responsible for the present state of affairs, that the remedy is in its own hands, but that no marked improvement is to be expected without strenuous effort on the part of an organized profession. Whether or not the solution lies in the plan of having a central clearing-house through the associated charities, as has been strongly advocated by eminent members of the profession in Boston, Philadelphia, and Washington, or through some other means depends partially upon local conditions in any given city, but some steps should be taken to provide for a careful study of local conditions that the means for correction of the evils that exist may be provided.

There are numerous socialistic features being brought before the profession at county-society meetings throughout the United States, but I shall not even mention them at this time. I have but one other point to make. I desire to close with an appeal to the younger members of this Society to take an active part in the work of the local organization and of the State Society. There is not only much work to be done, but there is an open field for volunteers. The number of willing workers in the past has been exceedingly limited. Any member of this Society who is willing to perform his share of the labors for the advancement of the Faculty will find a job waiting for him if he permits the slightest suspicion of such willingness to reach the ears of its officers, and I think I can also say that the reward for such services will be ample.

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Current Literature.

REVIEW IN PATHOLOGY AND BACTERIOLOGY

Under the Supervision of José L. Hirsh, M.D., Baltimore.

STUDIES IN THE FREQUENCY, LOCALIZATION, AND MODES OF DISSEMINATION OF TUBERCULOSIS, WITH ESPECIAL REFERENCE TO ITS OCCURRENCE IN THE LYMPH NODES AND DURING CHILDHOOD. Francis Harbitz. *Journal of Infectious Diseases*, March, 1905.

While this study is concerned chiefly with tuberculosis in children, Harbitz embraced the opportunity of post-mortem material in the adult, and has made a valuable contribution to the subject. He has placed the line between child and adult at the completion of the fifteenth year, a little lower than Nageli and a little higher than some other observers on the subject. The work concerns chiefly the lymph nodes of children. At each autopsy particular attention was directed towards the three chief groups—those of the neck, of the chest, and of the abdomen. The investigations consisted of autopsy, with detailed gross examination of the various groups of lymph nodes, inoculations of animals, and microscopic examinations. In 275 autopsies in children Harbitz found evidences of tuberculous lesions or tubercle bacilli in 117, or 42.5 per cent. Of these 117 cases, 72, or 61.5 per cent., died of tuberculosis, 21 cases (23 per cent.) had latent or obsolete tuberculous lesions, while in 18 cases (15.3 per cent.) latent tubercle bacilli existed. This percentage is greater than that usually found, but is accounted for by the fact that latent lesions existed in many cases which were revealed only by microscopical examination or by inoculations. In this series most of the non-tuberculous children were under two years of age; after the fourth year the tuberculous cases are seen to predominate over the non-tuberculous ones and in increasing ratio, constituting a good argument against the frequency of congenital tuberculosis.

The latent and obsolete tuberculosis was most frequently located in the lymph nodes which were caseous and partly in the lungs; in the latter case, as a rule, together with changes in the thoracic lymph nodes. The lymph nodes within the thorax were found to be infected most frequently (25 times), the cervical nodes and tonsils nine times, and the mesenteric nodes seven times.

A very important observation made by Harbitz is the occurrence

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in lymph nodes of tubercle bacilli demonstrable by inoculation, without concurrent macroscopic or microscopic changes. In a series of 142 autopsies tubercle bacilli were demonstrated in 18 of 91 cases in which there were no gross nor histological sign of tuberculosis. It is a striking fact that virulent tubercle bacilli were demonstrated most commonly in very young children, and, as a rule, oftenest in the cervical nodes, which gave positive results in 13 cases, while the mesenteric nodes gave positive results in only three cases. It is surprising how rarely the bronchial nodes gave positive results, being found in only three cases. It is also an interesting fact that Harbitz found the cervical nodes the first to be involved, and the bronchial and tracheal nodes to be involved later. Hence the micro-organisms seem to reach the nodes in the chest relatively late.

The question whether these bacilli possess their usual virulence is considered, and Harbitz concludes that tubercle bacilli found in the human body possess a variable virulence. Numerous inoculations in animals of tuberculous material of various kinds have shown that the time which elapses before the death of the animals from tuberculous infection varies greatly—a phenomenon not otherwise readily explained than by difference in virulence.

The question as to how long the bacilli may lie latent in the lymph nodes or elsewhere in the body Harbitz has not conclusively determined. While he does not deny the possibility of uterine infection as asserted by Baumgarten, or the infection in early infancy as is held by Behring, he is inclined to think that a latency of several months is likely, although at present a latency of several years cannot be denied, though it is not very probable. He cites a case of a child two months old, of healthy parentage, who died of a well-marked tuberculosis, and he states that it is highly probable that death may occur from post-natal infection even when the child is only five or six weeks old. This shows the care that is necessary in accepting Baumgarten's theory of congenital tuberculosis.

The study of the points of invasion of tuberculosis in children shows some interesting statistics, as well as calling attention to the numerous modes of infection. In the 72 fatal cases Harbitz finds the primary seat of the disease in the respiratory organs 31 times, digestive organs 9 times, general lymph tuberculosis 5 times, osseous system 5 times, throat or joint 1 time, doubtful 20 times. Most frequently the extension seems to be by the lymph stream, but the tendency in children to rapid and frequent infection of the internal organs and to the generalization of the tuberculosis also points to the blood stream as a frequent route, and as the lymph nodes must be considered especially susceptible, there is nothing against the assumption that they have been infected by way of the blood. It is also highly probable that the tubercle bacilli may pass

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through one or more groups of lymph nodes before they become stationery and set up inflammation. Among others, Ravenel has shown that the tubercle bacilli may pass through the intestinal mucosa and not cause tuberculosis until the retroperitoneal or even the thoracic lymph nodes have been reached. Tubercle bacilli have been demonstrated in the thoracic duct shortly after feeding. In children it seems to be the rule that the lungs are infected from the lymph nodes, for involvement of the tracheobronchial nodes without involvement of the lungs is common, while the reverse is seldom observed. The fact that in cases where the primary localization can be determined the respiratory is found the seat of infection in twice as many cases as in the digestive tract, it must be concluded that in children, at least, infection through the throat is more frequent than through the intestines.

Harbitz has also made a study of tuberculosis in adults. His figures regarding the frequency of the disease in adults is not as high as those of Nageli, Schmorl, and others. When all tuberculous changes are put together and represented by a curve, it begins comparatively high at the age of 16 to 20, with 72 per cent., then sinks somewhat to the forties 61 per cent., again rises rapidly in the sixties, where it reaches 90 per cent.

The study of the localization in adults shows that primary tuberculosis of lymph nodes is quite frequent; that, besides in the thorax, tuberculosis is quite often primary in the abdomen, and especially in the cervical nodes; not seldom it is found generally distributed, and that it often extends from one place to another, so that finally a great portion of the lymph-node system has been attacked by tuberculosis.

Very few of the cases showed primary tuberculosis of the intestinal tract, that is, 5.5 per cent. of all tuberculous cases. The great bulk of the cases showed lesions in the lungs and in the thoracic nodes. The author maintains that in adults pulmonary tuberculosis is often secondary to the lymph-node tuberculosis of childhood, and that the infection of the lungs occurs most likely by way of the blood.

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THE VIRULENCE OF HUMAN AND BOVINE TUBERCLE BACILLI FOR GUINEA-PIGS AND RABBITS. M. Dorset. *Bulletin of Animal Industry*, Part I, No. 52.

The experiments recorded deal solely with the virulence of human and bovine tubercle bacilli for guinea-pigs and rabbits, together with some observations upon the morphological and cultural characteristics of bacilli from both sources.

As a result of the guinea-pig inoculations we may conclude that there was a sufficient variation in the virulence of the human cultures for guinea-pigs to permit of their separation into two groups. In those animals inoculated with the most virulent group of human cultures the disease was marked by its rapid progress and by the relatively greater number of tubercle bacilli in the lesions. There were no differences observed in the effect produced by the two most

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virulent human cultures and the two bovine cultures on guinea-pigs. In both the disease was rapid in its progress, and in both tubercle bacilli were very numerous in the lesions. As a general proposition it may be stated that in the case of guinea-pigs weighing over 400 grams, and inoculated subcutaneously with 0.5 c. c. of a suspension having a density of a 24-hour typhoid culture, a difference of 100 to 150 grams in weight did not appear to influence the length of life of the animal.

From the results of the rabbit inoculations it is noted that mammalian tubercle bacilli may be divided into two classes—(a) those which cause the death of the rabbits in 20 days, due to a severe generalized tuberculosis, and (b) those which kill only after several months, or when an earlier death takes place the lesions produced are not severe, and necrotic changes are conspicuous by their absence. The lesions resulting from the inoculations with the virulent cultures are characterized by their wide distribution, rapid necrosis, and by the very great number of bacilli in the lesions. The lesions resulting from inoculation with the less virulent cultures are characterized by the absence of necrosis in the tubercles in those rabbits which died within seven weeks, and by the large conglomerate tubercles with extensive necrosis seen in those rabbits which survived for a longer time. Tubercle bacilli were found usually in very small tubercles. Tubercle bacilli of bovine origin in their action upon rabbits were indistinguishable from the most virulent human cultures. These experiments have been especially striking on account of the widely varying virulence among the human tubercle cultures and by reason of the fact that those human cultures showing the highest degree of virulence were indistinguishable from the bovine cultures with which they were compared. It is also interesting to note that those human cultures which were identical with the bovine cultures in their virulence for rabbits were also capable of causing a generalized tuberculosis in calves. And, in addition, only those cultures which caused the death of rabbits within 20 days were capable of bringing about a generalized tuberculosis in calves after subcutaneous inoculation. As a result of these experiments Dorset concludes:

1. Certain tubercle bacilli of human origin are indistinguishable either culturally, morphologically or with regard to their virulence for rabbits and guinea-pigs from certain tubercle bacilli of bovine origin.

2. There is considerable variation in the virulence of human tubercle bacilli for rabbits and guinea-pigs.

* * *

THE COMPARATIVE VIRULENCE OF HUMAN AND BOVINE TUBERCLE BACILLI FOR SOME LARGER ANIMALS. De Schweinitz, Dorset, and Schroeder. *Bureau of Animal Industry*, Bulletin 52, Part II.

The experiments described in this bulletin deal almost exclusively with (1) the infectiousness of tubercle bacilli of human origin for

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hogs and cattle and (2) the comparative virulence of human and bovine tuberculous virus for monkeys.

The plan adopted for the work consisted in the isolation of fresh cultures of human tuberculosis from sputum and from cases of generalized tuberculosis in adults and children, obtaining whenever possible material from cases which indicated an involvement of the abdominal viscera. Cattle and hogs were then inoculated intravenously and subcutaneously with the cultures of material so obtained; the feeding of human tuberculous material to calves; the isolation of bovine tubercle bacilli and their inoculation into cattle and hogs.

The experiments are described in some detail, with full autopsy notes. As a result of the experiments upon hogs, the conclusion is justified that certain tubercle bacilli of human origin possess quite as great pathogenic power for hogs as tubercle bacilli of bovine origin, and further the disease produced in hogs by human cultures was distinctly progressive in character, death taking place in two of the animals in 28 and 60 days, respectively. As to cattle the results are practically the same. Out of nine human cultures isolated, three, or 33 per cent., produced tuberculosis in cattle after subcutaneous injection. These three virulent cultures were all obtained from cases of generalized tuberculosis in children.

Contrary to the conclusions of Theobald Smith, the authors hold that there is no essential difference between the tubercle bacilli of human and bovine sources. They state that there is no character possessed by tubercle bacilli of bovine origin that may not be possessed by bacilli of human origin, and furthermore it is not necessary to assume that those human tubercle bacilli which resemble the bovine organism are of bovine origin.

The results obtained in the experiments with monkeys seem to justify the conclusions that no important difference exists between the two organisms.

While it is not disputed that a majority of the persons who become infected with tuberculosis contract the disease from other human beings, it is maintained that cattle also constitute a very important source of infection. The importance of the latter source cannot readily be overestimated in the light of the very considerable evidence which is accumulating in the support of the view that human and bovine tuberculosis are not essentially dissimilar. It is true that a difference does exist between certain tubercle bacilli of human origin and those of bovine origin, but it is not a specific difference or even a difference which permits the grouping of the germs as distinct varieties of the same species, but a difference practically confined to pathogenic virulence, and which makes the authors regard the tubercle bacilli of bovine origin merely as more virulent than those of human origin.

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PROCEEDINGS

OF THE

MEDICAL AND CHIRURGICAL FACULTY

OF MARYLAND

Editorial and Publishing Committee.

ALEXIUS MCGLANNAN, M.D. HENRY O. REIK, M.D. JOHN RUHRAH, M.D.

Secretaries of the County Societies are earnestly requested to send reports of meetings and all items of personal mention and of local or general interest for publication addressed to Dr. Alexius McGlannan, 847 North Eutaw Street, Baltimore.

THE OFFICIAL TRANSACTIONS OF THE MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND appear in a new form. The annual publication of a volume of transactions is replaced by a monthly issue in the MARYLAND MEDICAL JOURNAL. The interval between successive annual volumes is so great that the members get out of touch with the Faculty and in many cases individual interest in our proceedings wanes. The monthly publication will remedy this condition. Interesting information will be more rapidly disseminated, earlier knowledge of the workings of all parts of the organization will make discussion of disputed points more timely and their settlement as effecting local conditions prompter. The more frequent communication of ideas will bring all members closer together and aid in their cohesion into a strong and harmonious organization.

The change in the form of publication of these transactions is the result of the deliberation of the committee appointed by the Council at the Ocean City meeting. The committee report, which will be published in full later, recommended either of two plans—the publication of a State Society journal or the issuing of monthly communications in the MARYLAND MEDICAL JOURNAL. The Council decided in favor of the latter plan, and we begin in this issue the new order of things.

THE DEFENSE OF SUITS FOR MALPRACTICE is the latest addition to the already great number of advantages accruing from membership in the State Faculty. The worry of mind and depletion of

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purse associated with the defense of these vexatious litigations are necessarily great and severe. The retaining fee alone of a lawyer of any prominence is several times the annual dues of membership. Expert evidence is difficult to procure unless the defendant has wide acquaintance among the profession. Private corporations undertaking this form of liability insurance charge considerably more than the annual dues of our Society for this defense alone.

The Faculty offers to furnish all necessary legal services, to furnish all medical-expert services, and pay all necessary expenses of conducting the defense of the suit on the single condition of payment of annual dues in advance. If there were no other advantages in membership, this insurance against the annoyance of the attacks of adventurers and blackmailers, so common in our day and generation, would be sufficient reason for membership in the State Society. Considered in connection with the use of the library, the influence of the unification of interest in public affairs, and the many other valuable results of membership, no doctor of good standing can afford to remain outside the organization. (See minutes of the meeting April 26, 1905.)

THE PROGRESS OF MEDICAL ORGANIZATION is steadily advancing. Here and there throughout the country there are spots, becoming more prominent because of their rarity, where the crossroads style of medical society still exists, but in general the State societies are now organized as parts of the American Medical Association.

This improved organization means the better and more rapid disposition of the business affairs of the society and the more thoughtful consideration of its scientific contribution. What is more important, it is a progressive movement toward the accomplishment of a unification of the medical profession.

When this unity of interest shall have become complete by the extension of organization in every State and Territory, and the inclusion of all reputable men in the Association, the medical profession will be able to demand and secure its proper high position in the community, and the long-patient and freely-giving physician be shown to the public as the good Samaritan and generous benefactor he really is, and his rights and privileges will be obtained.

Then we may hope for just legislation in medical matters—for laws suppressing quackery in its many prefixed pathies; then physicians will not be misunderstood and judged mercinarily selfish when they condemn the legalizing of the various humbug varieties of pseudo-science, whose votaries prey on the ignorant and foolish; then we will not be accused of avarice and jealousy when we attempt to save the public from the clutches of knaves, whose roseate promises of impossible cures or suggestions of fearsome diseases are beguiling siren songs to lure the unwary.

Too often is it the case that the families of poor victims suffer want, and occasionally go to actual destitution in order to provide

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the money demanded by some quack for useless or improper treatment of an imaginary or hopeless ailment, or to secure silence regarding some rash confidence.

The exuberant growth of charlatans and quacks is largely due to the apathy and disorganization of the legitimate practitioners. Individually we know of these conditions, individually we feel strongly concerning their iniquity, individually we condemn them and strive to correct them, individually we exert little influence, but collectively—collectively our influence would be tremendous. But we are not as yet completely united.

Maryland has one of the oldest and one of the most respected State medical societies in the country. The Medical and Chirurgical Faculty has had over 100 years continuous existence, and the names of its members is a grand and inspiring roll of honorable men. But our influence is in no way commensurate with the glory of our past nor the promise of our future. How little of the glorious achievements of our Society during the last century is known outside our organization! How little do we influence legislation concerning medical matters! Quacks and charlatans of all types flourish in our State, plying their nefarious swindle uninterrupted under quasi-legal sanction. Why? Because we are not united, because everywhere throughout the State we find medical men who are not members of their county societies, who have no interest in organization, who refuse to consider the advantages of membership in the State Society, who, distrustful of their professional colleagues, neglect to protect themselves against the incursions and lootings of the ribald horde of marauding illegitimate practitioners who thrive on the impotence of our non-union.

We have in every county but one a permanent society, properly organized. Everywhere the members are honest, intelligent men of good reputation; but, unfortunately, we do not include every man of this character in our organization. There are so many outside who are so admirably qualified for membership that the reason for the condition must be ignorance of the advantages and necessity of joining rather than a deliberate determination to remain unattached. To reach these men and point out to them the reasons for becoming members is the duty of the present members. Let every member resolve to bring in one new member at once, and most of these desirable and willing men will become strengthening bands to our organization, and thereby be made potent agencies for good instead of continuing well-intending, but weak individual workers.

Another class of men, unfortunately all too numerous, are those who look on any society as a scheme for laudation on some at the expense of others; who resist organization as a device for binding the many to the will of the few. These men, because of jealousy or some misunderstanding, or injury real or fancied, go on for years, often in small communities, without any intercourse with other physicians. They are often men of great personal ability and influence, men of culture and of valuable attainments, all of

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immense importance when used in co-operation with others in an organization, but now wasted in vain individual effort. To attract such men, to make them see how wrong and foolish are their ideas concerning the aims and workings of our societies, is the duty of our members. Tell them that ability in any line is sought for and encouraged; show them what organized effort has accomplished in other States, and point out the superior advantages of membership in our society—advantages that make continued non-membership misguided obstinacy.

THE SECRETARIES OF THE COUNTY SOCIETIES are earnestly requested to send reports of meetings and all items of personal mention and of local or general interest for publication to Dr. Alexius McGlannan, 847 North Eutaw street, Baltimore.

REPORT OF THE MEMOIR COMMITTEE.

Baltimore, Md., April 25, 1905.

The Members of the Medical and Chirurgical Faculty of Maryland:

Gentlemen—The Committee on Memoirs begs leave respectfully to submit the following report of the members who have died since the last annual meeting of this Faculty, 15 in all:

CHARLES COCKEY

died at Queenstown, Md., on July 31, 1904, aged 62 years. He was graduated from the University of Maryland in 1866. He was a member of the Queen Anne's Medical Society, and was secretary to the Board of Health of that county.

GEORGE FOX CORSE

died at Gardenville, Md., of cancer of the intestines March 23, 1905, aged 66 years. He was graduated from the University of Maryland in 1864. He married Miss Sarah Sutton of Baltimore in 1866. He was born in Baltimore county.

PHILIP EUGENE CRAIG

died at Baltimore, Md., of typhoid fever September 20, 1904, aged 35 years. He was educated at the Baltimore City College, and was graduated in medicine from the Baltimore Medical College in 1897. He was a musician of "no mean ability," and was a leader in one of the prominent choirs of this city. "As a physician he inspired his patients with confidence." He was born in Harford county, Maryland.

ALBERT KIMBERLY HADEL

died at Baltimore, Md., of cerebral hemorrhage April 4, 1905, aged 55 years. In 1882 he married Miss Florence M. Hough of Baltimore, Md. He was graduated from the University of Maryland in 1889. He was president of

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the Society of the War of 1812; historian of the Society of the American Revolution; registrar-general of the National Society of the War of 1812; member of the American Medical Association and of the Alumni Association of the University of Maryland. At one time he served as secretary of the Baltimore Board of Health. He was the author of many historical papers, among which were "The Battle of Bladensburg," "Who Killed General Ross?" "The Life of Washington in the American Revolution," "Life of Franklin." His father came to Baltimore in 1843, and was health commissioner of Baltimore from 1847 to 1849. His mother was a descendant of the first white child born in New Haven, Conn., in 1839. The doctor was a native of Baltimore.

J. FUSSEL MARTENET

died at Baltimore, Md., of typhoid fever July 18, 1904. He was graduated from the University of Maryland in 1880. He was a member of the American Medical Association. For several years he had charge of the department of children in the Johns Hopkins Dispensary. He was the State vaccine agent. He was 46 years old.

RUSSELL MURDOCK

died at Baltimore, Md., of cerebral hemorrhage March 19, 1905, aged 66 years. He was graduated from the University of Virginia in 1861. He married Miss Margaret Taylor Falconer in 1873. He was a native of Baltimore. He was a member of and for many years an energetic worker in the Maryland Academy of Sciences. He contributed to the work in his department of surgery. The following contributions he made and they were published in the *Transactions of the American Ophthalmological Society:* "The Retina, an Asymmetrical Surface;" "Three New Instruments—Speculum, Ophthalmostat, Tenotome;" "Some Improvements in Instruments and Appliances for Cataract Operations;" "Sponge Cover for Ether Inhaler." In the *American Journal of Ophthalmology* were published two articles by him—"The Aluminium Nickel Shield" and "Note on Ovoid Glass Balls."

CHARLES H. POTTER

died suddenly at Baltimore, Md., November 9, 1904, aged 50 years. He was graduated from the Baltimore Medical College in 1898. He was a member of the American Medical Association; was formerly connected with the Johns Hopkins Hospital; had charge of the microphotograph department of the Tuberculosis Exposition held in Baltimore. He had made a specialty of microscopic photography for medical works, and in this direction his reputation was international.

ALFRED HENRY POWELL

died at Baltimore, Md., of heart failure November 4, 1904, aged 73 years. He was graduated from the Jefferson Medical College of Philadelphia in 1853. He married Miss Cora H. Waring of Mobile, Ala., in 1872. He was a surgeon in the Confederate army throughout the Civil War; sometime professor of surgery in the Washington University of Baltimore; for many years resident physician at Capon Srings, Virginia; at the close of the Civil

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War he was chief surgeon with Mahone's brigade; for 20 years he was physician to the Boys' School of St. Paul's Episcopal Parish. He was a native of Leesburg, Loundon county, Virginia.

Richard Henry Thomas

died at Baltimore, Md., of valvular disease of the heart October 3, 1904, aged 51 years. He was graduated from the University of Maryland in 1875. He was the son of the late Prof. R. H. Thomas of the University of Maryland. He was dean and professor of diseases of the throat, nose, and chest in the Woman's Medical College of Baltimore. He was a prominent minister of the Orthodox Society of Friends.

Seth S. Ullrich

died at Baltimore, Md., of angina pectoris November 20, 1904, aged 46 years. He was graduated from the Jefferson Medical College of Philadelphia in 1881. He was associate professor of surgery in the Baltimore Medical College; surgeon-major Maryland National Guard, attached to the Fourth Infantry; surgeon to the Baltimore & Ohio Railroad.

Arthur G. Watson

died at Baltimore, Md., of malignant disease of the intestines September 29, 1904, aged 53 years. He was graduated from the University of Maryland in 1872. He was a member of the city council of Baltimore.

Walter Walton White

died at Baltimore, Md., of bronchitis November 2, 1904, aged 61 years. He was graduated from the University of Maryland in 1870. He married Miss Elizabeth Grace Ewens in 1874. He had been physician to the Baltimore city jail and penitentiary; physician to the Kelso Home; one of the physicians to the Presbyterian Eye and Ear Hospital of Baltimore. He was a native of Oxford, England.

Elijah Williams

died at Baltimore, Md., of disease of the liver July 6, 1904, aged 56 years. He was graduated from the University of Maryland in 1869. He was a member of the Anne Arundel Medical Society. He was formerly State senator from Anne Arundel county. He lived at Armiger, Md.

John Forney Zacharias

died at Cumberland, Md., suddenly in his drug store, August 16, 1904, aged 63 years. He was graduated from the Jefferson Medical College of Philadelphia in 1860. He served as assistant surgeon in the Confederate army during the Civil War from 1862 to 1865. During the war he employed maggots in the treatment of hospital gangrene to remove decayed tissue, and claimed that thereby he "saved many lives, escaped septicemia, and had rapid recoveries."

Joseph T. Smith, Chairman.

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MINUTES OF THE SEMI-ANNUAL MEETING OF THE MEDICAL AND CHIRURGICAL FACULTY.

THE semi-annual meeting of the Medical and Chirurgical Faculty was held in the Casino of the Plimhimmon Hotel at Ocean City, Md., September 9-10, 1904.

The meeting was called to order by the president, Dr. E. N. Brush, Friday afternoon, September 9, at 3.30 o'clock.

Dr. Brush thanked the Society for his election to the presidency, and announced that a fund had been started for having a portrait made of Dr. Osler, and called for motions on further honoring him.

Dr. Fulton moved that the president appoint a committee to take up this matter and to carry out whatever might be decided upon.

The following program was carried out:

A series of reports on the recent progress in medicine:

Gynecology—Dr. Wm. S. Gardner.

Surgery—Dr. J. C. Bloodgood.

Neurology and Psychiatry—Dr. A. P. Herring.

Ophthalmology and Otology—Dr. H. O. Reik.

Pediatrics—Dr. John Ruhräh.

Discussion by Drs. Arthur and Anderson.

EVENING SESSION, FRIDAY, SEPTEMBER 9.

The session was called to order at 8 P. M. by the president, Dr. Brush.

The following address was delivered by Dr. Virgil Gibney, surgeon-in-chief to the Hospital for Ruptured and Crippled, New York:

"Is Not the Treatment of Congenital Clubfoot Begun Too Early?" "A Plea for Infantile Hygiene and Feeding."

Discussion by Drs. Winslow, Bloodgood, and Ruhräh.

A vote of thanks to Dr. Gibney was passed unanimously.

MORNING SESSION, SATURDAY, SEPTEMBER 10.

The meeting was called to order at 9.45 A. M. by the president, Dr. Brush.

The program was a symposium on nephritis, carried out as follows:

The Pathology of Nephritis—Dr. H. C. Hyde.

Nephritis as a Factor in Mental Diseases—Dr. E. N. Brush.

Eye Complications in Nephritis—Dr. H. Harlan.

The Nephritis of Infectious Diseases in Children—Dr. J. Buck.

The *Rôle* Played by Nephritis in Obstetrics—Dr. G. W. Dobbin.

The Treatment of Nephritis—Dr. A. D. Atkinson.

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AFTERNOON SESSION, SATURDAY, SEPTEMBER 10.

The afternoon session was called to order at 2.30 P. M. by the president, and the following papers were read:

"Diagnosis of Appendicitis"—Dr. F. J. Kirby.

Discussion—Drs. Winslow, Dirickson, Birnie, and Watson.

"The General Disappearance of Malaria from the Eastern Shore of Maryland"—Dr. E. J. Dirickson.

"Some Facts About Malaria"—Dr. Wm. T. Watson.

Discussed by Drs. Clarke, Steele, Reik, Fulton, and Kirby.

"The Midwife Problem and Its Legal Control"—Dr. Guy Steele.

Discussion by Drs. Brush, Fulton, Birnie, Nailor, and Reik.

"Infant Feeding"—Dr. H. A. Mitchell.

Discussion by Drs. Dirickson, Watson, and Ruhräh.

Dr. Reik moved a committee be appointed to investigate the midwife problem in Maryland and to report at the next meeting of the House of Delegates. Seconded by Dr. Fulton. Carried.

A vote of thanks to the Plimhimmon Hotel was unanimously passed.

The meeting then adjourned.

MINUTES OF THE HOUSE OF DELEGATES.

THE third meeting of the House of Delegates was called to order at 2.30 P. M. in the Casino of the Hotel Plimhimmon, Ocean City, Md., by the president, Dr. Brush.

The president opened the meeting with a short address on "The Opportunities of the Organized Profession."

Dr. Earle then gave a talk upon "The Duties of the Delegates and the Councilors."

Dr. Reik moved that the next meeting be held at 9 P. M. Seconded by Dr. Earle. Carried.

Adjournment.

The fourth meeting of the House of Delegates was called to order at 9 P. M., September 9, by the president, Dr. Brush.

Dr. Reik moved that a committee of two be appointed to consider a proposition to make the MARYLAND MEDICAL JOURNAL the official organ of the Faculty or to publish a separate journal, this committee to report at the annual meeting. Seconded by Dr. Earle. Discussion by Drs. Scott, Ashby, Brush, and Smith. Carried.

Dr. Ashby moved a committee of three be appointed to consider a fund for an Osler room in the library. Discussion.

Motion withdrawn and the matter to be left to the committee on the Osler testimonial.

The House adjourned.

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MINUTES OF THE GENERAL SESSION OF THE MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND.

THE one hundred and seventh annual meeting of the Medical and Chirurgical Faculty of Maryland was held at Baltimore April 25, 26 and 27, 1905.

The opening session was called to order at McCoy Hall, Johns Hopkins University, Tuesday, April 25, at 8.30 P. M., by the vice-president, Dr. S. T. Earle, Jr.

Address of the president, "The Physician as a Citizen," Dr. E. N. Brush.

WEDNESDAY MORNING SESSION, APRIL 26, 1905—FACULTY HALL, 10.40 A. M.

Dr. Cordell presided in absence of president and vice-presidents.

Dr. Cullen read a very interesting paper on malignant disease developing in or accompanying uterine myomata.

By drawings made from histological specimens he illustrated changes in uterine mucosa.

Scrapings from mucosa show very characteristic changes when examined by one accustomed to making these examinations daily.

He showed gross pathological specimens—one of squamous cell carcinoma associated with myoma.

In many cases definite changes take place in myomata themselves, and these are sarcomatous changes, with varying degrees being present.

Several illustrations showed these gradual changes from muscle fiber to sarcoma cells.

Often with the tumor before us in the laboratory we are unable to make a diagnosis.

In private homes we must depend upon bimanual examination.

Myomata are so often undergoing malignant processes that operations done for supposed simple myomata reveal well-developed malignant growths.

Rupture of the blood-vessels occur in some cases of myoma.

At an operation for removal of uterus for myomata an assistant should open the organ before the abdomen has been closed, that a possible sarcoma may be discovered and a complete operation done if necessary; also split the myoma to see what changes have taken place.

Discussion.

Dr. Hundley spoke of the contrast between the work done by Dr. Howard and himself years ago and the work now, when mortality is about 2 per cent. for hysterectomies.

He thinks that when a woman has a tumor it should be removed, as it is not the operation which is dangerous, but the delay.

It is to Cullen that we are indebted for keeping before us the radical treatment of these cases.

Sarcomata often grow slowly when blood supply is cut off.

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Dr. Wm. T. Howard, in discussion, said, in part, that he is 84, and has had "years of experience." He has never known a myoma change to sarcoma or carcinoma, but his 30 years' experience at professor at the University of Maryland made him suspect that such be the case, but he takes exception to Dr. Cullen's statement of the frequent occurrence of cancer of the uterus following myomata.

He has never seen but two cases of cancer of the cervix recover, and doubts Dr. Cullen's statistics of low mortality in his cases.

Objects to telling women they have fibroids, as it makes them neurasthenic. The majority of women have such growths, and they cause no trouble.

Dr. Neff and Dr. Cullen seconded a motion to extend Dr. Howard's time.

Dr. Howard gives great credit to J. Marion Sims.

Claims the statistics of the man who operates on all cases must be better than the operator who operates on large, troublesome growths only.

"More malpractice practiced on the genitalia of women than on the whole of mankind put together."

Often women come to Woman's Hospital suffering from the worst form of neuralgic pains after ovariotomy.

Did not feel that he could let Dr. Cullen's paper go by without giving the other side.

Dr. Cullen closed the discussion by paying tribute to Dr. Howard's work upon which the superstructure has been built.

Thinks microscope should be used as far as possible.

Dr. Bosley offered the following resolution:

"The Medical and Chirurgical Faculty of Maryland, assembled at its one hundred and seventh annual meeting, hereby most emphatically records its conviction that a general sewerage system is a vital need of the city of Baltimore, demanded by the interests of public health and of civic prosperity. In taking this action the Faculty voices in its representative capacity the accepted opinion of the medical profession of this city and State, as well as of all recognized authorities in sanitary science. A proper sewerage system is one of the primary fundamental necessities of a city of the size and rank of Baltimore, and constitutes an important safeguard against many epidemic and endemic diseases. It is a reproach to this city to have remained so long without this hygienic necessity, but it will be a still greater municipal disgrace to fail to remove this reproach when so favorable an opportunity is about to be presented to the voters. The benefits to the health and to the future welfare of this city far outweigh any burden which can possibly arise from the expenditures for the construction of the sewers."

Seconded by Dr. Neff.

Dr. Welch said he thought the resolution was vital and should be passed without debate.

Passed unanimously.

Review of the Deaths Due to Cancer During the Past Fourteen Years.—Dr. C. Hampson Jones stated that negroes in Baltimore constitute one-sixth of the population, and cancer is less frequent among them.

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Deaths from Cancer, Baltimore, taken from Records by Secretary Kiger.

		White.	Colored.
1891.....267	Corrected by Dr. Jones, 224	200	24
1892.....232	" " " " 183	160	23
1893.....249	" " " " 207	190	17
1894.....264	" " " " 196	174	22
1895.....302	" " " " 246	216	30
1896.....344	" " " " 275	250	25
1897.....316	" " " " 259	229	29
1898.....331			
1899.....309			
1900.....494			
1901.....373			
1902.....408			
1903.....388			
1904.....464			

Dr. Jones apologized for having been sick and unable to complete his work.

Dr. Welch discussed the report, and stated that cancer is increasing, but it must be borne in mind, on the other hand, that more people born into the world are able to live to the cancer age than formerly; also diagnosis is more often made now.

No evidence that cases have occurred in any special locality of Baltimore.

He asked Dr. Jones if the earlier death-rate of colored people did not explain the lower death-rate from cancer.

Dr. Jones replied that he did not have sufficient statistics to make this clear.

Dr. C. F. Davidson read a paper on "A Severe Case of Tetanus Successfully Treated by Antitoxin" (to be published later).

Recess to see patient.

Discussion—Drs. Dirickson, Goldsborough, D. E. Stone, and Davidson.

Drs. Goldsborough and Davidson think that the usual dose of 60 c. c. of tetanus antitoxin is insufficient, and should be given 100 to 120 c. c.

Dr. R. H. Johnston read a paper on "Empyema of Frontal Sinus" (exhibition of patient).

In January, 1904, the patient had what was thought to have been a mild case of "grip." Two weeks later had severe pain over left eye, recurring every day at 12 noon or between 12 and 4 o'clock—never later; duration of pain five or six hours.

Felt dizziness and pain growing worse until paroxysm was at its height, when it would be most severe over supraorbital notch.

After having passed through the hands of nine other physicians without relief, he came to the writer November 29, 1904, and diagnosis of frontal-sinus disease was made. Case was exceptional in failure to find discharge of pus from any point. Patient had injections of osmic acid made into nerve without relief, and returned to Dr. Johnston on January 2, 1905, prepared to submit to operation. Opened cavity under ether; found large amount of pus, and swabbed it out with 20 per cent. solution of chloride of zinc, then

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alcohol, and packed with iodoform gauze. Cavity now filling up and headaches entirely relieved.

Discussion.

Dr. J. R. Winslow stated that a law should be in existence by which these cases of obstinate neuralgia should be referred to or inspected by a competent rhinologist.

Pressure by growths or hypertrophies in nose often from middle turbinate.

Closed by Dr. Johnston, who remarked upon the absence of pus discharging from nose or any other point.

Drs. Friedenwald and Ruhräh's paper, entitled "Some Remarks on the Recent Diet Cures in the Treatment of Diabetes," was read by Dr. Julius Friedenwald.

The paper considers the milk cure, the potato cure, and the oatmeal cure. Exclusive milk diet is seldom advisable except in severe cases of diabetes where diacetic acid is present in the urine or in which diabetic coma has developed or is threatened. The addition of from a half to a liter of milk daily to a diet of other allowable foods often gives excellent results. The effect of milk should always be carefully studied to discover at once any bad effects.

The potato cure as recommended by them consists in replacing a portion of the bread by potatoes. About three times the weight of bread can be given in potatoes in arranging the diet, not only without harm, but often with beneficial results.

Their results with the oatmeal cure have been very good. This method should be reserved for severe cases exclusively. In some of these cases it is possible to remove all sugar from the urine by using oatmeal when this is impossible on a carbohydrate free diet. In other cases the oatmeal diet causes a disappearance of diacetic acid as well as of sugar from the urine.

These cures are valuable aids in the treatment of diabetes, but must be employed with caution. Every case must be carefully studied in order to obtain the best results.

Dr. Hirshberg being sick, his paper was read by title—"Gastric Conditions in Urticaria."

Adjourned.

WEDNESDAY AFTERNOON SESSION, APRIL 26.

This session was held at the Sheppard and Enoch Pratt Hospital, where the members of the Faculty were delightfully entertained by their president, Dr. Brush.

The new hydrotherapeutic department of the hospital was inspected, and Dr. Simon Baruch of New York read a paper on "The Physiologic Basis and Clinical Effects of Hydrotherapy in Chronic Disorders."

WEDNESDAY EVENING SESSION—M'COY HALL, 8.30 P. M.

The meeting was called to order by the vice-president, Dr. S. T. Earle, Jr. The following program was carried out:

Address by Dr. Clarence J. Blake, professor of otology, Harvard University; title, "Collaboration in Medical Education."

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A Consideration of the Benefits Conferred Upon Humanity by Medical Science:

a. Preventive Medicine—Dr. Wm. H. Welch.

Dr. Welch gave a very instructive history of the development of sanitary science.

He stated that there are evidences in the Bible of some knowledge of preventive medicine, and Galen, Hippocrates, and others at an early age believed that diseases were communicated through impurities in the atmosphere.

The Romans constructed their famous sewers and aqueducts with a view to improving the sanitary conditions.

Quite a few discoveries as to the origin of infectious diseases were made at an early date.

Sir John Pringle pointed out the fact that typhus fever is directly related to bad hygiene and overcrowding, and set about improving the sanitary condition.

Vaccination, the observations on scurvy and its control in the army and navy, and the classification and recording of diseases are among the other important advances made.

The establishment of the Board of Health of Great Britain during the third and fourth decades of the eighteenth century did much toward advancing the cause.

While the theory that pestilence resulted directly from filth was wrong in the light of our present-day knowledge, still it did much good by directing attention to improvement of hygiene.

Contamination of water was discovered by Morgan, and infectiousness and control of puerperal fever by Holmes. Pasteur while working on the theory that putrefactive material is the cause of inefction made his great discovery, and Lister, appreciating this infectiousness, did great work in trying to destroy the cause of infection.

It was Dr. Koch, however, who first was able to grow the organisms on artificial media, and his discovery led to many others between 1880 and 1890.

Immunization, discovered by Pasteur and later developed by others, was a great advance in preventive medicine.

Dr. Welch asked what had been accomplished by all these brilliant discoveries. Has the death-rate been reduced? In general, yes; in some localities it has been much reduced, in others not.

Infectious diseases, excepting pneumonia, have markedly decreased. The average duration of life has in many localities been increased six or seven years. Diseases of infancy are less fatal than formerly owing to improved methods of treating them, preventing their spread, and preparing food.

The laws regulating vaccination in Germany show what can be done toward the eradication of smallpox from a country. Tuberculosis, typhoid fever, and cholera are understood and are disappearing. Bubonic plague is more easily eradicated from a country than the pneumonic plague spread by rats. Much has been done to control diphtheria and tetanus, and the discovery by Dr. Reed and his coworkers of the mode of the spread and infection of yellow fever led to its eradication from Cuba.

It is expected that much may be accomplished by the Isthmian Canal Commission in eradicating tropical diseases.

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Our knowledge is small as compared to what is still to be known, and it is along this line that we are upon the threshold of great achievements.

b. Modern Therapeutics—Dr. I. E. Atkinson.

Dr. Atkinson disclaims the statement that therapeutics is behind other branches of medical science.

The healing art is still developed in mysticism, but less than formerly. Following the line of the observers in other departments, remedies exerting specific influence are being from time to time discovered.

Our best efforts are toward assisting nature in her recuperative processes.

The therapeutist realizes that an antidotal influence within each individual is his best helper, and along the line of conserving and following this influence he should go. Prevention of disease is better than its cure, and the physician is the conservator of health as well as the treater of disease.

c. The Debt This Generation Owes to Surgery—Dr. R. W. Johnson.

Dr. Johnson stated that surgeons do not claim to be the only life-savers. The modern bullet is more humane than its ancestor.

He gave a bright and witty contrast between the methods pursued by surgeons in the early part of the last century and the present-day surgical practice.

Dr. Welch moved that a vote of thanks be extended to Dr. C. J. Blake.

THURSDAY MORNING SESSION, APRIL 27—FACULTY HALL, 11 A. M.

The meeting was called to order by the vice-president, Dr. D. C. R. Miller. The program was as follows:

Improved Chemical Methods in the Clinical Laboratory—Dr. E. L. Whitney.

The speaker referred to the freezing-point method as applied to the urine and other body fluids. The instrument used in applying this method is a sensitive thermometer.

The corpuscular method of Hamburger was also described. Improved studies have been made by these methods on the blood in uremia and in diseases of the kidneys.

The determination of the freezing point of the urine in various conditions is an important additional test in urinalysis.

The speaker emphasized the following points:

1st. Cardiac insufficiency can often be differentiated from renal insufficiency by cryoscopy.

2d. The lowering of the freezing point of the blood in heart disease is an indication for the use of oxygen.

3d. Unilateral kidney disease can be detected by applying this method to separated urines.

4th. The fall in freezing point of urine below —.9° C. indicates disturbance of the renal functions.

A certificate from the Pennsylvania Medical Society introducing Dr. Wm. T. Bishop was presented, and the Faculty by rising vote welcomed Dr. Bishop to the meetings.

Dr. Taneyhill moved that Dr. Bishop be the guest of the Faculty at the banquet on Thursday evening.

The Faculty then proceeded to the election of members for the Board of

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Medical Examiners. The House of Delegates presented the following names: Drs. B. W. Goldsborough of Cambridge and Dr. A. Hebb of Baltimore.

A motion was made by Dr. I. R. Trimble that Dr. W. M. Dabney's name be placed on nomination. Seconded by Dr. H. H. Young. Carried.

The vote was by ballot, and the result was as follows:

Dr. Goldsborough, 118; Dr. Wm. Dabney, 85; Dr. A. Hebb, 40.

Drs. Goldsborough and Dabney were declared elected.

Blood-Pressure Observations for the Practicing Physician—Dr. Clinton E. Brush.

Dr. Brush stated that the average blood-pressure made in normal man with the Riva-Rocci apparatus with a 12-cm. cuff is 112 millimeters Hg., while with a 4-cm. cuff it thus reaches 130 Mg. Hg. The Riva-Rocci apparatus, however, gives only systolic pressure. Diastolic pressure is often markedly different. The method is a purely subjective one.

The Erlanger apparatus determines accurately systolic and diastolic pressure, but it is too cumbersome for general use.

Strassburger's method may prove useful in determining both systolic and diastolic pressure with the Riva-Rocci machine. In all cases both systolic and diastolic pressure should be taken. The highest pressure pathologically is found in cases of increased intracranial pressure.

Leucocytosis—Dr. T. R. Brown.

The writer discussed the views concerning the origin of leucocytes. Polymorphonuclear, neutrophilic, and the eosinophilic cells are said by Ehrlich to be increased in so-called active leucocytosis, whereas the lymphatic leucocytosis is a passive process. The eosinophilic cells are increased in many diseases which the writer specified. The lymphatic leucocytosis is associated with an hypertrophy of the lymphatic glands.

The various conditions in leucopenia were discussed. The many conditions and diseases in which the polymorphonuclear leucocytes were increased was briefly referred to.

The president laid before the Faculty plans for a proposed new library building, and urged the necessity of erecting such a building.

Cytodiagnosis in Psychiatry—Dr. Clarence B. Farrar.

Dr. Farrar referred to the importance of the careful chemical study of the spinal fluid, but especial emphasis was laid upon the microscopic examination of the fluid. The lymphatic cells are greatly increased in paresis. This increase indicates a chronic process. A large polymorphonuclear leucocytosis in the spinal fluid suggests an acute process. Infiltration is particularly found in the cells of the adventitial coat of the blood-vessels.

In other forms of functional psychosis the spinal fluid is normal. Lumbar puncture should only be carried out with strict surgical asepsis. The patient should be in bed and kept there several hours after the puncture. Three to five c. c. is usually sufficient for a test. Cerebral tumor and high-grade arteriosclerosis are contraindications of lumbar puncture.

The Success Which at the Present Day Attends the Operation of Cataract Extraction and the Causes Which Contribute It—Dr. Samuel Theobald.

Improved surgical technique, local anesthesia, better nursing are all factors in the present-day success which attend the operation for cataract.

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THURSDAY AFTERNOON SESSION, APRIL 27—M'COY HALL, 4.30 P. M.

The session was called to order by Dr. Brush.

Annual oration, "Unity, Peace, and Concord"—Dr. Wm. Osler.

Following the oration was the presentation of the portrait of Dr. Osler to the Medical and Chirurgical Faculty by his medical friends.

Presentation Address—Dr. R. W. Johnson.

Adjournment, followed by a banquet at the Hotel Stafford at 8 P. M.

The president's address, as well as the papers of Drs. Baruch and Blake, the annual oration by Dr. Osler, and the presentation address, will be published in full in the near future.

MINUTES OF THE HOUSE OF DELEGATES.

The fifth meeting of the House of Delegates was held in the Hotel Stafford April 25, 1905, Tuesday at 2 P. M.

There were present Drs. A. G. Smith, W. J. Todd, T. M. Chaney, B. W. Goldsborough, F. B. Smith, Hughes, A. Williams, W. F. Hines, L. A. Griffith, J. W. Humrichouse, Paul Jones, E. N. Brush, S. T. Earle, J. D. Blake, J. Neff, H. Harlan, J. S. Fulton, J. Ruhräh, G. S. Gardner, T. S. Latimer, R. Winslow, H. O. Reik, J. McP. Scott, and T. H. Brayshaw.

Dr. Brush presided.

After the roll-call the following reports were heard and accepted: Report of the secretary by Dr. Ruhräh; report of the trustees by Dr. W. Brinton; report of the Council by Dr. Latimer; report of the library committee, read by the secretary for Dr. Preston, and referred to the Council; report of the memoir committee by Dr. J. T. Smith; report of the committee on legislation, read by the secretary for Dr. Welch; report of the committee on fund for widows and orphans by Dr. Cordell.

Dr. Brush leaving, Vice-President Earle took the chair.

Report of the Board of Medical Examiners—Dr. J. McP. Scott.

Dr. Reik moved that a special committee of nine members of the Medical and Chirurgical Faculty of Maryland, of whom two shall be selected from the Board of Medical Examiners, be appointed by the president to consider the points referred to in this report, and to draft a new law, or amendments to the present law, for presentation to the Faculty at its next semiannual session. The committee shall send copies of the proposed law to each member of the House of Delegates at least 10 days before said semiannual session.

This was discussed by Drs. R. Winslow, J. Blake, H. O. Reik, W. J. Todd, W. F. Hines, S. T. Earle, H. Harlan. Report accepted.

Report of committee on medical journal was read by Dr. Reik.

Dr. Scott moved that the report of the committee on medical journal be accepted and referred to the Council, with instruction to consider the terms with the MARYLAND MEDICAL JOURNAL, to be reported to the House of Delegates Thursday at 9 A. M.

The House adjourned.

The sixth meeting of the House of Delegates was held in the Hotel Stafford Wednesday, April 26, 1905, at 9 A. M.

Dr. Brush presided. There were present Drs. A. G. Smith, T. M. Chaney, Goldsborough, Hughes, Williams, Hines, Humrichouse, Jones, Earle, C. O'Donovan, Neff, R. Winslow, Reik, Scott, Miller, Brinton, Brush, and Ruhräh.

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The minutes were read and approved.

Dr. Reik read his report of the committee on society defense against malpractice, and proposed the following amendment to Chapter VII of the By-Laws:

To amend Chapter VII of the By-Laws by the addition of Section 6 as follows:

SEC. 6. The Council may, upon request and in compliance with the conditions hereinafter named, assume the defense of suits for alleged malpractice brought against members of the Faculty.

Conditions: *a.* Any member desiring to avail himself of the provisions of this section shall, as soon as possible after any demand has been made upon him or any suit instituted against him, present to the Council his request for defense, and together therewith a full and complete history of the case, the services rendered, and his further connection with or relationship to the plaintiff. Should the Council conclude that his claim for defense is valid, he shall sign a contract renouncing his own and vesting in the Council sole authority to conduct the defense of said suit, and agreeing to make no compromise or settlement of the case without the consent of the Council given in writing and signed by its proper officers.

b. The Council shall thereupon contract with said applicant to take full charge of said suit, to furnish all necessary legal services, to furnish all medical-expert services, and pay all necessary expenses of the accused; provided that the Council shall not obligate the Faculty to the payment of any damages awarded by decree of court or upon compromise.

c. The Council shall not undertake the defense of any suit based upon an act committed prior to May 1, 1905, nor before the date of qualification of the accused as a member of this Faculty. Furthermore, no member shall be entitled to the privileges of defense by the Council whose dues to the Faculty are not paid in advance, as elsewhere provided in the Constitution and By-Laws.

d. Such medico-legal defense as is herein contemplated refers only to suits for alleged malpractice, and is in no sense meant to cover criminal prosecutions nor suits for assault, criminal abortion, feticide, homicide, or other criminal act.

e. The Council shall have authority to appoint an attorney-at-law for the term of one year to represent the Faculty in all suits for malpractice and similar threats against its members, and to determine his compensation.

Discussion—Drs. Winslow, Scott, Earle, and Brush.

Dr. A. G. Smith moved that the report be adopted. Seconded by Dr. Neff. Carried.

Dr. O'Donovan moved that inasmuch as the citizens of Baltimore in the near future will decide upon the issue of bonds for various purposes, each of which pertains in a very large measure to public health, be it

Resolved by the Medical and Chirurgical Faculty of Maryland; That it endorses most heartily the improvements proposed, and urges every citizen of Baltimore to cast his vote in favor of sewers, park and street improvements, and that a copy of this resolution be transmitted by the secretary to the committee on loans and to each of the daily papers.

Seconded by Dr. Earle.

The House adjourned.

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Society Reports.

BALTIMORE CITY MEDICAL SOCIETY.

MEETING HELD APRIL 7, 1905.

Pathology of Bronchiectasis.—Dr. MacCallum opened a symposium on bronchiectasis with a discussion of its pathology. Various classifications had, he said, been proposed. None of them, however, was quite satisfactory. It was pretty generally agreed that some forms were congenital, and that in the acquired forms inflammatory conditions of the lungs were an important feature. Cylindrical, beaded, and saccular forms might be distinguished, but such a classification was not fundamental, and possibly Fowler and Godlee's division into acute and chronic forms was the most satisfactory. The lungs in bronchiectasis might be found insufflated or contracted. On section they were reddened; the blood-vessels were enlarged and much foul-smelling contents were present. The epithelium might be gone or changed to a squamous type. Sometimes it was normal. Atrophic changes were found in the lung walls, due largely to a loss of elastic tissue. In older cases there was a new growth of connective tissue, and new blood-vessels were formed in abundance. Many explanations had been given of the mechanism of the condition. Laennec was the first to recognize the pulmonary catarrh as the prime factor. He thought that the muscles of the small bronchi became relaxed and infiltrated with exudate, and that a change in the elastic tissue took place early. Stagnation of the secretion was for him the fundamental mechanical cause of bronchiectasis, but it is difficult to see how this could be the case. Mechanical forces acting on the bronchi from without or within have also been thought to be causative. Corrigan explained bronchiectasis as essentially a pulmonary cirrhosis with contraction and drawing on the bronchi. Inspiratory and expiratory air pressure have also been thought to be the cause. The most probable theory seems to be the one which regards bronchiestasis as due to an imprisoning of air under heightened pressure, the bronchi being partly occluded by secretion, which acts like a valve, allowing air to enter, but not to escape.

Clinical Features.—Dr. Osler said that there were two types of bronchiectasis, clinically depending on whether the bronchioles or the bronchi were chiefly affected. The first type was rare, was usually acute (though a chronic form was also described), and often followed the acute infectious diseases. Of bronchiectasis proper one might distinguish: 1. The pure

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form. This was the most common type, and followed pleurisy, pneumonia, etc. 2. The form appearing as an incident in pulmonary tuberculosis. 3. The traumatic form, associated with foreign body, tumor, aneurism, etc. Clinically, chronicity, a history of pneumonia (often followed by empyema and successful operation), the gradual onset of cough, signs of retraction at the right base, cough becoming almost constant with the expectoration of a sputum of typical appearance and odor—these were the characteristic features. Severe hemorrhages, general peripheral hyperostosis (Marie's disease of clinical hypertrophic pulmonary osteoarthropathy), and brain abscess were the three most remarkable complications. The treatment was unsatisfactory. Inhalations and direct intratracheal injections might be of use.

Dr. Cole reported briefly a case of acute bronchiectasis in which this condition developed under observation during the course of a chronic bronchitis. The diagnosis had been made by the appearance of the typical sputum. Dr. Boggs had recently isolated the influenza bacillus in pure cultures from the sputum of six cases of bronchiectasis at the Johns Hopkins Hospital. Lord of Boston had found this organism in the sputum in many cases of chronic bronchitis and in a few cases of bronchiectasis. Others had found it in whooping-cough, so that there was now some doubt as to its specificity. In pulmonary osteoarthropathy the proliferation was periosteal, and even the marrow might be reproduced.

THE JOHNS HOPKINS HOSPITAL MEDICAL SOCIETY.

MEETING HELD APRIL 3, 1905.

Sarcomatous Myoma.—Dr. Cullen showed a specimen of this condition removed from a woman of 42. Several years ago she had presented the usual features of a myomatous uterus, which, with the subperitoneal nodule above it, was removed by the usual operation. The tumor was thought to be myomatous. In February, 1905, she was seized with sudden pain in the lower abdomen, and was operated upon again. The pelvis was found filled with blood, and sarcomatous nodules were discovered and incompletely removed. Examination of the tumor removed at the first operation, and thought to be a myoma, showed sarcomatous degeneration.

Fibroma of Abdominal Wall.—This was also shown by Dr. Cullen, and had been removed from a woman under 30 years of age. Three years previously she had noticed a mass under the ribs which had grown slowly at first and later more rapidly. There had been some loss in weight. At operation a fibroma was found springing from the muscle sheath.

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Primary Carcinoma of the Tubes.—The growth in this case had started from the Fallopian tubes, had involved the ovary, and studded the omentum. Pain at defecation had been a prominent symptom. A complete hysterectomy was done and six inches of bowel removed, the sphincter ano being preserved. The patient is still alive and well.

Accessory Omentum.—A railway conductor, following a struggle with a recalcitrant passenger, was seized with abdominal pain, showing a temperature of 100.5° and a leucocytosis of 17,000. There was no abdominal rigidity, but exploration was advised, and at operation a grayish mottled mass was found, which turned out to be a twisted accessory omentum arising from the union of the ascending and transverse colons.

Dr. Kelly, in commenting on Dr. Cullen's first case, said that the interesting question was now raised as to which myomata could be regarded as simple and treated as non-malignant, and in which ones the prognosis was bad. At any rate, in these cases the uterus should always be laid open and examined carefully before the abdomen is closed. It is important also to determine how far these growths extend, for if they involve the mucosa the wisdom of supravaginal amputation—otherwise the operation of choice—would be doubtful.

The Electrical Theory of Matter.—Prof. H. C. Jones of the Johns Hopkins University gave a more or less popular exposition of the recent work on radioactivity. The great problem of physics had always been, he said, to know whether there were several different elements or whether at bottom all were really one. Hydrogen in early history, and later other elements, had been thought to be the fundamental substance. The study of radioactivity really started with the work of Thompson, who, working over the question as to whether or not the atom was the ultimate unit, elaborated the corpuscular theory which defined corpuscles as little pieces of matter carrying unit electrical charges and as really the ultimate units of the matter. The mathematicians then showed that to account for the properties of the corpuscle no matter was necessarily assumable. Unit electrical charges moving at a high velocity through an elastic medium gave all the properties of mass and inertia which we ascribe to matter. This theory is now generally accepted.

Following the work of Thompson came the discovery of x-rays by Röntgen. Then Becquerel found a remarkable radiation produced by uranium, and Schmidt by thorium. This led to a careful study of pitchblende by the Curies and the discovery of radium.

The Properties of Radium.—The element owes its interest to the fact that it does things no other form of matter does and to a degree never dreamed of. Its first remarkable property is its unique ability to transform itself into another element—helium. Its second phenomenal attribute is its ability—also absolutely unique—of giving out a tremendous amount of heat. These properties of the salt inhere not in the radium itself, but in an "emanation" which may be distilled over from the radium bromide and which is constantly being "recreated" in exhaustless amounts. The "emanation" is also

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the source of the remarkable alpha, beta, and gamma rays, and it seems probable that a large part of the sun's heat may be due to the presence in it of radium in quantity.

Experiments on Amphibian Embryos.—These experiments, reported by Dr. Lewis, were undertaken by him to throw, if possible, some light on the problems of preformation and epigenesis. The development of the lens and cornea were studied. The animals were operated on at the time of closure of the medullary groove, and the object of the first series of experiments was to see whether a lens would arise from the ectoderm without the presence of the eye. A subcutaneous excision of the eye was done and the skin returned to its place. Serial sections of the animal were then examined at a later stage, and no lens was found unless the eye had regenerated. In another series of animals the eye was transplanted, and in many of these cases a lens developed from the ectoderm over the misplaced eye. Even when an eye from one species was transplanted under the skin of another, a lens, remarkably enough, was often found to develop. All the findings of the experiments spoke for epigenesis as against preformation.

Book Reviews.

ATLAS AND EPITOME OF GENERAL PATHOLOGIC HISTOLOGY. By Dr. H. Dürck of Munich. Edited, with additions, by Ludvig Hektoen, M.D., Professor of Pathology, Rush Medical College, in affiliation with the University of Chicago. With 172 colored figures on 77 lithographic plates, 36 text cuts, many in colors, and 371 pages of text. Cloth, $5 net. Philadelphia, New York, London: W. B. Saunders & Co. 1904.

While the text of this work is clear, concise, and thoroughly satisfactory, its chief merit consists in the illustrations. It contains 80 lithographic plates with as many as 26 colors, and 36 figures in black and colors. The majority of the plates are extremely well done, and with the attached descriptions show a decided advance in this field of work.

Dr. Dürck has avoided critical discussions of theories, and has for the greater part given the generally-accepted views in regards to the significance of pathologic processes.

The study of tumors occupies a large part of the book. We have read this portion with much pleasure and profit. It is here especially that the lithographic plates show their excellency, and in some respects are superior to the text. We consider the present volume far superior to that on special histology, which we reviewed some months ago. J. L. H.

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MARYLAND MEDICAL JOURNAL.

JOHN S. FULTON, M.D., *Editor.*

Associate Editors:

THOMAS R. BROWN, M.D. | HUGH H. YOUNG, M.D.
ROBERT REULING, M.D. | JOSE L. HIRSH, M.D.

BALTIMORE, JULY, 1905

A LAY CRITICISM OF THE PHYSICIAN AS A CITIZEN.

IN a letter to the *Journal of the American Medical Association* May 20 Mr. Bok, editor of the *Ladies' Home Journal,* criticises the medical profession rather severely for failure to lend its influence to the fight against the patent-medicine evil. Last winter, he says, bills to regulate the patent-medicine trade were offered at 14 State legislatures, and in 13 States the proposed legislation failed. Before these bills were introduced Mr. Bok received, he says, hundreds of letters from physicians and scores of resolutions from medical societies commending his stand on the patent-medicine question. After the bills were defeated scores of physicians, he says, wrote to him deploring the corruption of their State legislatures. While the bills were under consideration not a single physician nor any representative of a medical society in any of the 14 States appeared to advocate the passage of such legislation. Indeed, hardly any of those who appeared in support of the bills could give a forcible or intelligent statement of the necessity for such legislation. A few representatives of the Liquor Dealers' Association supported the bills, their motive being the restriction of what is largely a protected fraudulent liquor traffic. Members of the W. C. T. U. actively supported the bills in their usual extravagant and ineffective style. Legislative committees having charge of such bills sometimes asked that physicians of standing might appear at the hearings and explain the merits of the bills proposed, but medical advice was not forthcoming in any instance. "Here," says Mr. Bok, "is a clear case of shirking responsibility."

In the coming winter another attempt will be made to regulate the patent-medicine trade, and physicians will have another chance to aid a cause in whose merits they are particularly well informed. Mr. Bok will supply full and timely information to any physician or any medical society expressing an interest in the subject, but he hints rather broadly that he has been surfeited with commendatory words, and wants only the substantial assistance which the profession, by virtue of superior knowledge, owes to such a movement.

SOME PROFESSIONAL OBSERVATIONS ON THE SAME SUBJECT.

THERE was no general assembly in Maryland last winter, but the Maryland legislature is no doubt on Mr. Bok's program for the winter coming, and it is doubtful if he will find Maryland physicians more effective citizens than those of other States.

The MARYLAND MEDICAL JOURNAL has frequently remarked on the feebleness of the profession even in the support of its own measures. At each session of the legislature from 1892 to 1902 the Medical and Chirurgical

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Faculty of Maryland endeavored to get effective legislation on the practice of medicine. Instead of gaining power with each renewed effort, each succeeding legislature has found the organized profession feebler. In 1904 no attempt was made at legislation, though the losses in the previous 10 years had been greater than the gains. The sense of defeat did not greatly affect the profession. It would have been a good sign if physicians had been properly humiliated by the string of defeats sustained. Those who knew nothing about the matter accepted the rebuffs, as did some of Mr. Bok's correspondents, with raillery at the stupidity and corruption of the legislature. There is not the slightest reason to believe that the Faculty's measures have at any time been beaten or even injured by the use of corrupt means. The first bill to regulate the practice of medicine which the Faculty succeeded in carrying through the legislature died by executive veto. This veto was secured single-handed by a physician, a member of the Faculty. Where was the Faculty when the bill was considered by the governor? Since that time the Faculty's measures have not suffered at the hands of the governor. The opposition has always been able to sufficiently enfeeble the bills in their progress through the assembly. The law of 1892 represents the high-water mark of our achievement thus far. We made no material advance since that time. This winter the Faculty will try again to pass an effective practice act. The committee on legislation will no doubt prepare a bill which every member of the Faculty should support, but it is not in the power of the Faculty to prepare a bill good enough to pass on its merits. Assemblymen are not and do not pretend to be well informed on the practice of medicine. They will be guided by whatever professional opinion is offered. If the bill is left to the unaided judgment of the reference committee, it will never be considered. The proper and logical fate of the bill, if left to its inherent merits, will be to die in committee.

If there is no opposition, the advocates of the bill will not be able to get the bill read, though they may advance it and perhaps pass it. If the measure is good enough to become a law, it will arouse opposition, and for a change of method the legislative committee might draft a bill stringent enough to excite very vigorous opposition. It would be worth while, indeed, to propose such legislation as would bring out all the antimedicals in force, if by so doing the active interest of the profession could be aroused. It is in the power of the Faculty to secure whatever medical legislation the State really needs, but the influence of the Faculty has not in the last 12 years been brought to bear on any general assembly.

The legislative committee is expected to do more than such a committee can possibly do. A small group of men cannot represent the medical profession of the State in an effective way. The committee should understand and the members of the Faculty should understand that the real power which moves things at Annapolis emanates from the many legislative districts, and is effective in proportion as it is intelligently directed. A committee at Annapolis cut off from the profession in the counties and the master of a ship cut off from his engine-room are in about the same plight. The Faculty has a right to expect of its legislative committee full and prompt information as to the status of its measures at every critical moment, and the committee has a right to expect from the members of the Faculty an instantaneous response in the form of direct and vigorous appeal to the legislators who control the situation.

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In the presidential address of Dr. Brush, published last month, and in the address of Dr. Reik, printed in this issue, most of the special political responsibilities of medical men are forcibly presented. Almost any intelligent layman who should become acquainted with the scope and diversity of our technical capabilities in citizenship would marvel at our general inefficiency, as Mr. Bok does at our indifference to the patent-medicine evil.

The MARYLAND MEDICAL JOURNAL has previously pointed out the causes of failure to secure needed legislation, and as the authorized mouthpiece of the Faculty expects to advocate the measures which the Faculty will prepare next winter. Before those measures are formulated the JOURNAL is able to say that its own contribution to the coming struggle will include but little comment on the merits of the legislative proposition and less notice of the arguments in opposition, but will consist largely in the effort to develop the political strength of the Faculty—power enough, if properly applied, to pass any bill which ought to become a law.

IS BENJAMIN GASKILL DEAD?

AS LIKELY as not Benjamin Gaskill is dead. If he had been an honest man there would be little doubt that he is genuinely dead. But he was—or is—a rogue, and far more clever than he need be to impose a stage funeral upon the city of Philadelphia and his fellow-directors of the Manufacturers' Club. If there were any evidence that Gaskill had previously uttered fraudulent obsequies, the answer to the present question would be that as likely as not Mr. Gaskill is alive. If he is alive he probably considers his death the cleverest ruse he has ever played upon the city of Philadelphia and his fellow-directors of the Manufacturers' Club.

If he is not a mercenary rogue, and loves a game of many variations, he can repeat his funeral tomfoolery in twenty cities at less than a forger's hazard. His attending physician will give him a death certificate. In some places an undertaker's certificate would be as easily obtained and just as satisfactory. A hack-driver's certificate will do in some places. But where the game is so easy a true sportsman would not play.

Having obtained a certificate of death, he must go to the board of health for a burial permit. The permit clerk is not a suspicious person. In exchange for an honest-looking death certificate he will give a burial permit to any messenger the undertaker may send. Of course, the permit clerk will expect some sort of a funeral to occur. The safest choice of a resting-place, if one be not really dead, is a country churchyard outside the municipal jurisdiction. In that event the permit clerk will not expect to hear of the burial permit again. One can arrange for a long railroad ride as baggage or express. In that event the health department has a theory that the transportation permit will be returned, but no one will sit up to wait for it. It would be slightly dangerous to choose a city cemetery for one's corpus, but nothing like so dangerous as raising stock certificates. Some time ago we printed the story of a man who put through the whole fraudulent business of his own illness, death and burial without an accomplice, and over and over the JOURNAL has criticised the laxity of burial laws, and especially the need of systematic verification of deaths.

The rumor that Benjamin Gaskill is alive is no idler than the official documentary evidence of his death. As likely as not Gaskill is dead.

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Medical Items.

Drs. Wm. H. Welch, W. S. Halsted, and Howard A. Kelly are in England. John S. Sargent is to paint a portrait group of the four original members of the faculty of Johns Hopkins Medical School. Dr. Osler completes the group.

Among those attending the meeting of the American Medical Association at Portland July 11 to 14 will be Dr. John W. Chambers, Dr. J. C. Bloodgood, Dr. Marshall L. Price, Dr. Alexius McGlannan, Dr. H. M. Simmons, and Dr. S. T. Earle.

Citizens of Rockville, Md., objected to the location of a private sanitarium for tuberculosis near their town. Dr. Sternberg and other Washington physicians were interested in the project, but were overcome by the wisdom of Rockville and withdrew.

A Massachusetts maker of patent medicines has published his formulas and given all the world liberty to compete in the manufacture and sale of his nostrums. He thinks that physicians can with entire propriety prescribe these medicines in suitable cases.

In an editorial in his church paper the Rev. Donald Guthrie suggests that at special services to be held in all the city churches next autumn physicians be invited to deliver lay sermons on tuberculosis. This experiment was tried in Montreal a year ago and aroused a great popular interest in the subject.

The Baltimore Federation of Labor has appointed a strong committee to co-operate with the Maryland Association for the Prevention and Relief of Tuberculosis. Mr. H. Wirt Steele, with Rev. Donald Guthrie and Dr. John S. Fulton, visited the Federation on June 6 and explained the purposes of the Association.

At a majority of the teachers' institutes to be held next fall a lecture on tuberculosis will be a special feature of the program. The program of the State Teachers' Association to meet at Blue Mountain House on July 13 will also include an address on tuberculosis. A small tuberculosis exhibition will also be installed in the hotel during the meeting.

The Liverpool School of Tropical Medicine has lost another of its brilliant investigators, Dr. Dutton, who died in the Congo, where he was studying trypanosomiasis and tick fever. Dr. Dutton was the first holder of the Walter Myers fellowship, founded in memory of Walter Myers, who died of yellow fever at Para in 1901 while engaged in investigating that disease.

Eleven members of the graduating class of Georgetown College, Washington, failed to get their diplomas, the faculty withholding them on account of dishonesty in examinations. The seniors were required to take an examination in medical zoology. They protested on the ground that no textbooks on the subject were available. The protest being without avail, the seniors took unfair means to pass the examination.

The smallpox outbreak at Brunswick was brought to an end with three cases. That at Cumberland, also past, included but two cases. That at Hagerstown, now about over, included about 30 cases. The Hagerstown outbreak arose from a patient coming from Richmond, who was but slightly sick and had no physician. Six cases followed before the diagnosis was made. The smallpox history of Maryland for 12 months past is all comprised in these three outbreaks.

The new health commissioner of Pennsylvania is Dr. Samuel G. Dixon, president of the Academy of Natural Sciences. The State Department of Health was created by the legislature to replace the State Board of Health. The salary of the commissioner is $10,000. According to the provisions of the law the State is divided into 10 sanitary districts, each in charge of a medical officer of health at a salary of $2500. There is besides an advisory board of six members, four of whom are physicians.

The first registration of tuberculosis under the new State law on the subject was made on

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April 27, and the average daily registration since that time has been 15 cases. If the experience so far indicates the future results, Maryland will equal in the first year the results obtained in New York after many years' experience. Of the 23 counties, two have not so far registered any cases. The distribution of prophylactic supplies has involved much difficulty, particularly in the case of physicians in remote country districts. The opposition which many supposed would arise has not so far materialized.

At the annual commencement of St. John's College, Annapolis, Dr. John C. Hemmeter received the honorary degree of LL.D. Dr. Hemmeter was the orator of the day, and in the course of his address spoke in favor of the project to amalgamate the University of Maryland, the Maryland Agricultural College, and St. John's College into a State university. Dr. Hemmeter was born in Baltimore 42 years ago, graduated at the City College of Baltimore and studied medicine at the University of Maryland, graduating in 1884. He is the professor of physiology at the University School of Medicine and the author of textbooks on diseases of the stomach and intestines.

There is a new journal in the field, the *American Journal of Tuberculosis*, published in Detroit by the Sutton Publishing Co. The editor is Dr. E. L. Shurly. There are seven articles in the second number, which is just at hand. One of them is a good article. Its subject is "The Progress of the Sanatorium Movement in America." The author is Dr. Wm. H. Baldwin, who may not have read this paper at Washington and may not have published it elsewhere. The editor remarks that the article of Dr. Vail "is rather refreshing, inasmuch as it is not tainted by any suspicion of craze." Dr. Vail's opening remarks include the following: "Yet the woeful disease and affection diremps loved ones by the thousands from the most sacred place of all, the home." "It is enhancing its number of victims in the face of all opposition almost as precipitously as the increase of propagation and population our human race." Dr. William Hooker Vail lives in St. Louis, and his paper is about "Sanitation and Isolation: Two Requisite Factors in the Eradication of Tubercle Bacilli." No one met more tubercle bacilli than he. He says: "The tuberculous patients have been privileged the full authority and communication of the entire circumference of the globe." "The tuberculosis germs lie beneath your feet; they fill the air that is wafted into your face; water and food are conveyors of this insidious foe; the fly transmits it from place to place and from home to home; by the mosquito and vaccination it is probable that every pure and healthy child's stream of life is inoculated with tubercle bacilli." "There is no question but that flies, mosquitoes, and, I dare say, vaccination, are methods by which the tubercle bacilli that are transmitted and inoculated into the beasts as well as into the human family. These usitatives and natural, etc." Dr. Vail has original ideas about the segregation of the tuberculous. "A person suffering with this disease is very peculiar, as all physicians are cognizant of." He recommends a board of examination to consist of "a neurologist, a dermatologist, bacteriologist, ophthalmologist, mycroscopist, surgeon, an expert in chest diseases and five general practitioners." "There should be pertinaceous solicitations for the cessation and construction of flats with dark and crowded apartments, especially in cities, every dwelling should be light and airy." Another refreshing paper is by Dr. C. A. Tebault. Dr. Tebault lives in New Orleans, where they do not believe that mosquitoes convey yellow fever, because they have mosquitoes all the time and yellow fever only part of the time. Dr. Tebault does not believe in the specificity of tubercle bacillus or any other parasite. He agrees with Dr. B. Ward Richardson, Braxton Hicks, Sir Thomas Watson and other good souls who would be shocked out of their shrouds if they knew it. The title of Dr. Tebault's paper is "The Parasitic Origin of Phthisis Pulmonaris." The *American Journal of Tuberculosis* is refreshing. There is no taint of craze about it. It is as necessary as anything written since Turner's Physiology.

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THE PRESENT DECLINE OF MALARIA IN MARYLAND.

By Wm. T. Watson, M.D.,
Baltimore.

STIMULATED by the title of a paper to be read last fall by Dr. Dirickson at the semiannual meeting of our State Faculty upon "The Disappearance of Malaria From the Eastern Shore of Maryland," I looked up and briefly reported upon malaria conditions in the vicinity of Baltimore.

I have since extended my inquiry to other parts of the State. My investigation has not been exhaustive, but I believe it has been sufficient to show very well the malarial conditions in the State.

While the hospital reports, in which the diagnosis rested upon the demonstration of the malarial parasites in the blood, are, of course, the more satisfactory, yet the clinical observations of my correspondents, who, for the most part, are the leading practitioners of their respective localities, are to be relied upon, especially in regard to intermittent malaria or "chills and fever."

All the reports which follow were received in May or June, 1905.

BALTIMORE AND VICINITY.

Johns Hopkins Hospital.—From the printed reports of the superintendent I have constructed charts which tell at a glance of the rise and fall in the number and percentage of cases of malaria treated during the past 15 years.

Chart No. 1 shows every case in the hospital wards in which the plasmodium was found. No matter for what ailment the patient was admitted, if the blood examination showed the plasmodium the case was classified under the head of malaria. This chart also shows the total number of medical cases treated in the wards.

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Chart No. 2 represents the same facts as the previous one reduced to percentages.

Chart No. 3 shows the number of cases of malaria treated in the dispensary, also the total number of medical cases treated at the same time. The figures for 1904 are not available at this time.

It may be objected that a change of policy regarding the admission of malaria patients to the hospital wards might be responsible for the conditions shown in Charts Nos. 1 and 2. This objection could not apply to the dispensary figures, where no discrimination could be exercised regarding those applying for treatment. As a matter of fact, I have been told by the hospital authorities that the only change of policy of late years has been an increased desire to admit malaria patients to the wards for teaching purposes.

Chart 4. Through the courtesy of Dr. Thomas B. Futcher I have been furnished with the residences and occupations of the cases admitted to the hospital wards in the four years 1892-1893 and 1902-1903, from which I have been able to construct this chart, showing the probable sources of infection.

It will be seen that in the lapse of 10 years, while the actual number of cases from the shores of the Patapsco have greatly diminished, the percentage from this section has increased. The percentage from the State at large has diminished.

From what we know regarding the habits of the mosquito which carries the malarial organism, viz., that it is a country mosquito and does not travel far from its breeding place, and from what we know of the habits of quite a large percentage of our population in frequenting the various fishing and pleasure shores along the Patapsco, Middle and Back rivers, it seems probable that nearly all the cases tabulated as infected in the city really contracted the disease in the country.

City Hospital.—The records of this hospital are only available since 1898. I am indebted to Dr. H. G. Beck and Dr. Barnes for the following and other data: All cases in which the plasmodium was found: 1898, 53; 1899, 24; 1900, 46; 1901, 47; 1902, 50; 1903, 20; 1904, 28—an average of 38 cases per year. A study of residences and occupations of these cases shows that fully 45 per cent. were infected outside the State of Maryland. For example, 11 cases in 1898 were soldiers and 14 cases in 1902 were sailors.

Maryland General Hospital.—Dr. E. Novak, resident physician, has kindly procured for me the number of cases in which the plasmodium has been demonstrated as follows: 1899, 13; 1900, 8; 1901, 3; 1902, 7; 1903, 5; 1904, 2. The two cases in 1904 were from Sparrow's Point.

University Hospital.—Dr. Arthur M. Shipley, superintendent: "The cases of malaria treated at this hospital during the past five years are as follows: 1900, 40 cases; 1901, 35 cases; 1902, 25 cases; 1903, 11 cases; 1904, 12 cases. The diagnosis in every case was confirmed by the microscope."

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Baltimore County.—Dr. John W. Harrison, Middle River: "We still have malaria, but not one-fifth as many cases as 10 years ago."

Dr. J. S. Woodward, Sparrow's Point: "We have malaria still with us, but probably not more than one-fifth as many cases as 10 or 15 years ago."

Dr. J. C. McCormick, Sparrow's Point: "Malaria has of late years been steadily decreasing in this vicinity until there are probably not more than one-eighth as many cases of 'fever and ague' as there was 10 years ago."

Dr. Frank Eldred, Sparrow's Point: "We still have malaria in this neighborhood, but it has steadily declined since 1896, until now we see few cases compared with formerly."

Dr. C. N. Athey, Canton: "Although my practice is now larger and more widely spread, I do not see one-fourth the number of cases of malaria that I did eight years ago."

Dr. E. J. Williams, Canton: "When I began practice in 1874 malaria was the prevailing disorder both in Canton and in the country along the Patapsco as far as North Point. Now in the same region malaria is a rare disease."

Dr. H. S. Jarrett, Towson: "We have practically no malaria in this part of Baltimore county."

Anne Arundel County.—Dr. Sidney O. Heiskell, Quarantine Station: "I have not known of a case of malaria in this vicinity for five years and more."

Dr. Thomas H. Brayshaw, Glen Burnie: "My practice extends along the Patapsco, Magothy and Severn rivers, and their tributaries. About 12 years ago malaria reigned supreme in this region. Now it is rare indeed to find a case of malaria, and such cases as are seen are importations."

TYPES OF MALARIAL ORGANISM IN BALTIMORE CASES.

Of the cases treated at the Johns Hopkins Hospital in the four years of 1892-1893 and 1902-1903, 60 per cent. were tertian and 40 per cent. aestivo-autumnal.

In 106 cases treated at the City Hospital in which the type of organism is given, 60 per cent. were tertian and 40 per cent. aestivo-autumnal.

The quartan organism is rarely found.

The tertian and aestivo-autumnal cases exist in the same localities. Thus of 103 tertian cases treated at the Johns Hopkins Hospital in the four years above quoted, in which the place of infection was pretty definitely determined, 82 were infected in the State of Maryland, and 69 of these were from Baltimore and the shores of the Patapsco. Of 66 cases of aestivo-autumnal infection, 50 were from Maryland, and 43 of these from Baltimore and the shores of the Patapsco.

WASHINGTON AND DISTRICT OF COLUMBIA.

George Washington University Hospital.—Dr. Sterling Ruffin: "The following statement shows the number of cases admitted by

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years from 1889 to 1904, inclusive. The diagnosis in each case rested upon the demonstrated presence in the blood of malarial organisms:

Years.	Total number cases. Medical.	Malaria.	Tertian.	Aestivo-autumnal.
1899.....	106	11	11	..
1900.....	110	8	8	..
1901.....	115	4	2	2
1902.....	47	2	2	..
1903.....	216	1	1	..
1904.....	513	8	7	1
Total.....	1107	34	31	3

Washington Asylum Hospital.—Dr. D. Percy Hickling: "The total number of cases of malaria treated at this hospital from June 30, 1896, to June 30, 1905, will be found in the table which follows. The diagnosis was usually made from the clinical symptoms, the microscope being used only in obscure cases and for purposes of demonstration.

"Our institution is situated in the extreme eastern section of the city, on the borders of the Eastern Branch. It is in this section that Washington malaria originates. A number of our cases developed in the institution among the prisoners, in the almshouse, or complicating other conditions in those under treatment in the hospital department.

Years.	Total number of cases (mostly medical).	Cases of malaria.	Percentage of malaria cases.
1896-97.....	767	42	5.5
1897-98.....	901	48	5.3
1898-99.....	1258	79	6.3
1899-00.....	1297	83	6.4
1900-01.....	1404	85	6.0
1901-02.....	1257	20	1.6
1902-03.....	1542	36	2.3
1903-04.....	1560	30	1.9
1904-05.....	1909	12	0.6

Government Hospital for the Insane.—Extract from the annual report for 1904: "Special attention is directed to the great decrease in the number of cases of malaria and the total absence of typhoid infection during the past fiscal year. This is especially gratifying when the conditions in previous years are reviewed. A previous report (1896) states that 'the whole number of insane persons under care during the year was upward of 2000. Of these, 801, or about 40 per cent. of the whole number here, were treated for intermittent fever or distinctive malarial disease. The showing among employes is even worse. There is an average of about 470 persons employed, or, allowing for the changes during the year, some 550 in all. The records show 313 different individuals

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employed, or 57 per cent. of the whole, to have been under treatment at some time during the year for intermittent fever. In other words, more than 47 per cent. of the entire population of St. Elizabeth have been "down with the chills" during the year closed.' In 1901, 107 cases were reported; in 1902, 97 cases; in 1903, 44 cases. Dnring the present year only two cases are reported, in both of which the aestivo-autumnal form of parasite was found. This remarkable decrease of malaria in the hospital is, without doubt, due to the complete drainage of surface water, absence of cesspools, and the more liberal use of window screens."

It is interesting to note that the year 1896, in which malaria existed at this institution to such a remarkable extent, is the year of greatest prevalence in the vicinity of Baltimore.

Garfield Hospital.—Dr. L. H. Reichelderffer, superintendent: "We do not receive at the Garfield Hospital more than one-fourth the cases formerly treated. All come from the District of Columbia."

Emergency Hospital. — The superintendent reported cases of malaria treated at the Emergency Hospital as follows: 1899, 94; 1900, 100; 1901, 66; 1902, 65; 1903, 50; 1904, 49. The diagnosis in the majority of these cases was made from clinical symptoms. The total number of patients treated fluctuated between 1500 and 1700 annually.

EASTERN SHORE.

Cecil County.—Dr. Charles M. Ellis, Elkton: "The abrupt and almost entire disappearance of malarial fevers from Cecil county is certainly remarkable. * * * In 1864 they were a veritable scourge to us, and continued so until about 1869. During the following decade, though not entirely absent, they were in marked depression compared with the preceding year. In the fall of 1879 there was another rise. The intensity of this period increased until 1885 and 1886, when almost every family in Elkton and along the Elk river had chills. * * * Malarial fever practically disappeared from our midst in 1886 and 1887."

Kent County.—Dr. W. F. Hines, Chestertown: "I have not treated any cases of malaria in Kent county for 10 years or more."

Queen Anne's County.—Dr. James Bordley, Centreville: "Some years ago we had so many cases of chills and fever that there were hardly enough well people to take charge of the sick. For several years I have not seen a case of malaria."

Dr. S. T. Earle, Baltimore: "I practiced medicine in Queen Anne's county from 1870 to 1884. In the early years of my practice I saw a good deal of malaria and some fatal cases of the pernicious type. When I left Queen Anne's there was but little malaria."

Talbot County.—Dr. S. K. Wilson, Tilghman: "Malaria does not exist in this neighborhood."

Dr. P. L. Travers, Easton: "Dr. Julius A. Johnson, our leading

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physician, says that 20 years ago malaria was very prevalent, he having sometimes 40 to 60 cases in a season. Now malaria is practically unknown here."

Dr. Chas. F. Davidson, Easton: "In my first five years of practice (1890-1895) we had some malaria here, but now it is rare indeed."

Caroline County.—Dr. Alex. Hardcastle, Denton: "In the last 10 to 15 years malaria has almost disappeared from this section. A case is rarely met with nowadays."

Dorchester County. — Dr. B. W. Goldsborough, Cambridge: "We do have malaria here, but we have many fewer cases than formerly. The type of pernicious malaria which used to produce the so-called 'congestive chill' has now entirely disappeared."

Wicomico County.—Dr. F. M. Slemmons, Salisbury: "Malaria formerly prevailed in our county. It still exists, but the number of cases at this time is much fewer than in the past. I am confident I have seen at least *two cases* in 1905."

Somerset County.—Dr. Gordon T. Atkinson, Crisfield: "I began the practice of medicine in 1870. At that time malaria gave me most of my work in the fall months, not so much in Crisfield as in the country three to eight miles away. It has now almost entirely disappeared."

Dr. W. F. Hall, Crisfield: "In our immediate neighborhood malaria is practically unknown. Twenty years ago we frequently met it."

Dr. Charles W. Wainwright, Princess Anne: "Malaria is now very rare indeed. Seldom do I run across a distinctly malarial condition."

Worcester County.—Dr. Edwin J. Dirickson, Berlin: "In the years gone by the accusation of being malaria infected to some extent may have been justly applied to the Eastern Shore. At this time cases of malaria are so rare that they attract attention. Twenty-five years ago I have used in my practice 1000 grains of quinine daily. Now I do not use 1000 grains a year for the treatment of malaria."

Dr. Paul Jones, Snow Hill: "About 20 to 30 years ago malaria was rife in our county. I have not seen a case for about 10 years."

WESTERN SHORE.

Allegany County.—Dr. E. T. Duke, Cumberland: "Malaria formerly prevailed here to a considerable extent, especially along the Potomac river and Chesapeake & Ohio canal. Now it is seldom seen. Dr. W. W. Wiley tells me that 25 years ago it was very prevalent, but now he rarely sees a case."

Washington County.—Dr. V. M. Reichard, Fair Play: "Twenty-five years ago malaria was a great scourge to this community. Whole families were ill with it. For the past 10 years I have not seen an open, frank case of malaria arising here. I occasionally treat an imported case."

Frederick County.—Dr. Franklin Buchanan Smith, Frederick: "There have been but few cases of malaria in this neighborhood

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in the past five years. My records show but three cases of undoubted malaria in that time. Twenty-five years ago my records show possibly 100 cases per annum. My experience is also that of the rest of the profession in this neighborhood."

Carroll County.—Dr. C. Birnie, Taneytown: "There is no malaria in this region, nor has there been for 35 years, with the exception of a limited local outbreak a few miles from here which lasted but two or three years. It was doubtless an importation."

Howard County.—Dr. Samuel J. Fort, Ellicott City: "I do not believe there has been a genuine case of sporadic malarial fever in this vicinity for years."

Montgomery County.—Dr. Aug. Stabler, Brighton: "It is undoubtedly true that malaria is much less prevalent here than it was some 20 or 30 years ago. I do not use an ounce of quinine in a year in the treatment of malaria."

Harford County.—Dr. C. A. Hollingsworth, Belair: "I have never seen a case of malaria arising in Belair. The only cases I have seen have been in our neck region, 7 to 15 miles south of here. I gather from physicians down there that it is much less prevalent than formerly."

Dr. R. H. Smith, Havre de Grace: "There has been a marked decrease in the prevalence of malaria in the last 15 years. I now rarely see a well-defined case of chills and fever."

Prince George's County.—Dr. L. A. Griffith, Upper Marlboro: "Our section is now almost entirely exempted from malaria. Twenty-five years ago I attended each year from 40 to 50 cases of malaria; now, over the same territory, I am sure I do not have five cases annually."

Dr. V. L. Perry, Hyattsville: "Malaria is almost endemic along the Eastern Branch, Prince George's county, and I have been able to note no difference in the force or frequency of its attacks during the six years that I have been living here."

Dr. W. Franklin Taylor, Laurel: "Malaria is quite rare in this section. I have had no cases under observation for several years in which the presence of the parasite was definitely shown."

Calvert County.—Dr. Thomas M. Chaney, Chaney: "Previous to 1888 we had many and serious cases of malaria in Calvert county. It has steadily subsided both in the number and severity of the cases. There are now not more than one-twentieth the number of cases we saw 20 years ago."

St. Mary's County.—Dr. Thomas Lynch, Leonardtown: "From May until December we have cases of malaria to treat, both intermittent and remittent. I now have a number of cases of remittent fever. Most of the profession down here call this fever typhoid, but there are too few deaths for it to be typhoid."

Dr. F. F. Greenwell, Leonardtown: "Intermittent fever has almost disappeared from our midst, there being a notable decrease in the last 10 years. I have had less remittent fever during the past four years than formerly, but I fear it is on the increase again, as I treated four cases of it in June of this year—an unusual number

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for this season. Some of my co-laborers diagnose these cases as typhoid."

Charles County.—Dr. L. C. Carrico, Bryantown: "We have very little malaria now in Southern Maryland. In my 20 years of practice there has been a marked subsidence of this disease. We occasionally see cases of intermittent and remittent fever, but they are 'few and far between' as compared with 10 or 20 years ago."

FLUCTUATION OF MALARIA.

The preceding reports show that malaria, which at one time prevailed through almost the entire State, has markedly and generally subsided.

Before concluding that the present subsidence of malaria in Maryland will be permanent or will go on to extinction we must take into consideration the history of malaria in Maryland and in other countries.

Dr. Charles M. Ellis of Elkton writes that he "has long been of the opinion that our malarial fevers had certain curves of prevalence and depression," and in illustration gives the data already quoted, viz., a rise in the years 1864-1869, then a marked depression for 10 years, then another rise in the years 1879-1887, and then a subsidence which has lasted to the present time.

Most interesting information on the fluctuation of malaria is obtained from Kent county.

In 1842 Dr. Peregrine Wroth, a distinguished practitioner in Kent county, published a book upon the history and treatment of the malarial fevers (then called bilious fevers) of the Eastern Shore. In the preface he speaks of malaria as "that fever which has so long been a scourge of the peninsula."

Twelve years later, 1856, he wrote: "Whatever be the cause, the fact is beyond dispute, our malarious fever has been on the decline, and for the last three years the autumnal months have been almost as salubrious as June, which Dr. Rush styled 'the resting month of febrile diseases.'"

At a later period there was another rise in prevalence, succeeded by a fall and apparent extinction, as can be gathered from this report from Dr. W. Frank Hines, 1905: "I have lived here, with the exception of three years, since 1856. As a boy I suffered with malaria about half my time. When I began the practice of medicine in 1877 malaria prevailed and was always with us until about 1880 or 1881, when a marked decline occurred, which has continued to the present time. For 10 years I have not seen an undoubted case of 'chills and fever.' It is a source of wonder to me that what was once the hotbed, the home and abiding-place of malaria has now become a good place to rid oneself of the disease."

A parallel condition occurred in Somerset county. In 1856, the year in which Dr. Wroth wrote of the decline of malaria in Kent county, Dr. A. W. White wrote of Somerset county as follows: "From the middle of August or first of September to the coming of heavy frost the physician has rarely any other disease (than malaria) to contend with. It has not, however, been so prevalent

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here for the last three or four years. A marked decline has taken place both in the frequency and severity of it."

That at least one marked increase, followed by a decline, has taken place since 1856 is evident from the reports already given from Drs. Atkinson, Hall, and Wainwright of Somerset.

In the very years in which there was such a marked decline in Kent county there was a great increase in malaria in the neighborhood of Baltimore, only 25 miles westward.

In 1856 a committee of the State Faculty, consisting of Drs. H. P. C. Wilson, James Bordley, and William H. Metcalf, wrote: "That Baltimore city is the center of a highly malarious district, and that this malaria is generated and abundantly diffused within the city limits, are facts that our experience at the almshouse substantiates and the annual reports of previous years abundantly confirm.

"It further appears from the almshouse reports of several years back that the number of cases of malarious fevers have been steadily on the increase, each year bringing in more cases of this disease in proportion to the whole number treated than the year previous."

Similar fluctuations in the prevalence of malaria have occurred in other States and other lands. Many instances have been published by Hirsch in his "Handbook of Geographical and Historical Pathology."

DISAPPEARANCE OF MALARIA.

England was at one time an exceedingly malarious country. Defoe (quoted by Nuttall) in 1722, writing of the marshy country about the mouth of the Thames, says: "The men, being bred in the marshes and being seasoned to the place, did pretty well with it, but they always went into the uplands for a wife, and that, the women coming from these parts into the fogs and damp, presently changed their complexion, got an ague or two, and seldom held it more than a year, and then the men go to the uplands again and fetch another, so that it was very frequent to meet with men who had from five to six to fourteen or fifteen wives."

Sir Joseph Fayrer, writing in 1881, says that two kings, a queen, a cardinal, and a lord protector and many great people are known to have died of malaria.

As late as 1860-1865 cases of malaria were being treated in London hospitals.

In 1901, Nuttall, who investigated the subject, writes that "the only case of ague known to us arising in England, and in which the parasites were found in the blood, is one of which Dr. Fanning of Norwich has told us."

Hirsch (1883) tells of the disappearance of malaria from many parts of Germany where it formerly prevailed.

Celli and Gasperini (1901) tell of the disappearance of malaria from certain localities in Tuscany, Italy, which 30 years ago were very malarious.

TO WHAT IS THIS SUBSIDENCE AND DISAPPEARANCE DUE?

The causes for this decline given by my Maryland correspondents are mainly four—(1) the substitution of artesian for ordinary

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well water, (2) the better drainage of land, (3) the extensive use of quinine, and (4) the more frequent screening of houses.

Drinking-water as a factor in the spread or decline of malaria can be absolutely dismissed. It has been demonstrated to the satisfaction of all men who have kept in touch with the subject that the only way in which malaria can be contracted is by the bite of a certain genus of mosquito—the anopheles—which has itself become infected by sucking the blood of a person who is infected with the malarial parasite. Viewed in this light, drinking water is seen to play no part in the transmission of malaria.

The drainage of pools, by exterminating the breeding places of malaria-carrying mosquitoes; the use of quinine, by killing the parasites in their human host; the screening of houses, by keeping infected mosquitoes from inoculating healthy individuals—either one of these measures, if carried far enough, would suffice to exterminate malaria from the world.

Has either or all of these means been used to a sufficient extent to account for the subsidence or disappearance of malaria in certain localities?

Dr. Charles M. Ellis of Elkton writes that the abrupt disappearance of malarial fevers from Cecil county "cannot be ascribed to any change or improvements in agricultural processes or of those obvious physical conditions which here abound and have ever been recognized as favorable to their growth."

Clearly, better drainage did not enter into the sudden disappearance of the disease from Cecil county. As the mosquito was not then suspected of carrying malaria, it is not likely that increased screening was suddenly practiced to a great extent.

The subsidence chronicled in Kent and Somerset in the 50s could not have been due to the drainage or screening, else there would not have been a subsequent recrudescence. Neither was it due to extensive use of quinine, for that drug was then used very sparingly, as we learn from Dr. Wroth's book.

In England it was thought that the disappearance of malaria might be due to the extinction of the anopheles mosquito, but Drs. Nuttall and Piggs found the anopheles present in every locality where malaria formerly prevailed.

Harrington, in his "Practical Hygiene" (1905), writing on this subject, says: "Koch and many others are strongly of the opinion that the use of quinine has had more to do with the disappearance of malaria than anything else, but it is probable that there is some other as yet unrecognized cause. * * * That there is some such undiscovered local condition must be very evident when we consider the following facts published by Celli and Gasperini: 'Certain localities in Tuscany which less than 30 years ago were very malarious are today, so far as can be ascertained, in precisely the same general condition as obtained before malaria disappeared therefrom. The stagnant marsh water swarms with anopheles larvae, and the air above with myriads of the imagines. There is no lack of the malarial parasites for infection of the mosquitoes, for the people go to other districts and return with malaria, and yet, in spite of the presence of the essential factors for an exten-

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sive epidemic, no outbreak occurs. This freedom is not due to acquired immunity, for the inhabitants take the disease when they go to malarious districts to work. The mosquitoes are not insusceptible to infection, for specimens captured there are readily infected by malarial blood in Rome. Quinine cannot be credited with being the cause of the exemption, for it is not used more extensively than elsewhere.' "

It will be seen that while certain procedures can exterminate malaria, yet for some unknown reason malaria sometimes becomes extinct even where none of these measures are taken.

The subsidence of malaria in Maryland for the past 15 to 20 years, with no concerted efforts along the lines now known to prevent the disease, makes it probable that it is due to some unknown natural cause.

Whether there has been a disappearance of the anopheles mosquito from certain localities can only be determined by a qualified investigator. The experience of other countries would indicate that they have not departed.

CONCLUSIONS.

Malaria, which at one time prevailed throughout almost the entire State, has markedly and generally subsided.

On the Eastern Shore it is almost extinct.

The same is true of that part of the Western Shore west of a line drawn through Washington, Baltimore, and Belair.

In Anne Arundel, Calvert, St. Mary's, Charles and Prince George's counties, and the District of Columbia it exists, but in marked diminution as compared with 15 or 20 years ago.

It still prevails along the borders of the Patapsco (mainly on the north side) from Gwynn's falls to the Chesapeake bay, and in those portions of Baltimore and Harford counties bordering on the bay. This strip of territory probably contains more malaria than all the rest of the State of Maryland, but even here there is not more than one-fifth as many cases as there were 10 or more years ago.

While the drainage of land, the filling in of swamps, and the use of quinine and screens may have played a part in this general decline, their part has been but a minor one.

The decline has been due to natural causes rather than to anything man has intentionally or unintentionally done.

The present decline may go on to the extinction of the disease, as in England, or after a time there may be another rise in the malarial curve, as has happened before in Maryland and elsewhere.

If, however, while the disease is at its present low ebb, the people of the malarious districts thoroughly screen their houses against mosquitoes, and cases of malaria are promptly treated with quinine, there will be no rise, but rather a decline, which will go on to its extermination.

There are still a few physicians in Baltimore who are treating many cases of malaria annually. The foregoing statistics should suggest to them that they change their diagnosis and treat their patients for what they've got.

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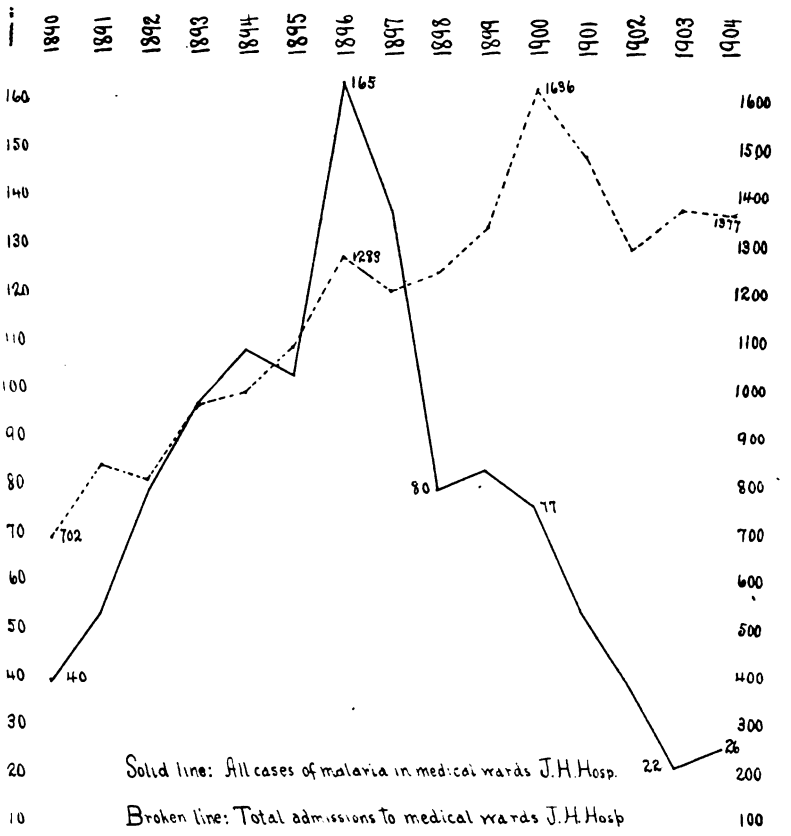

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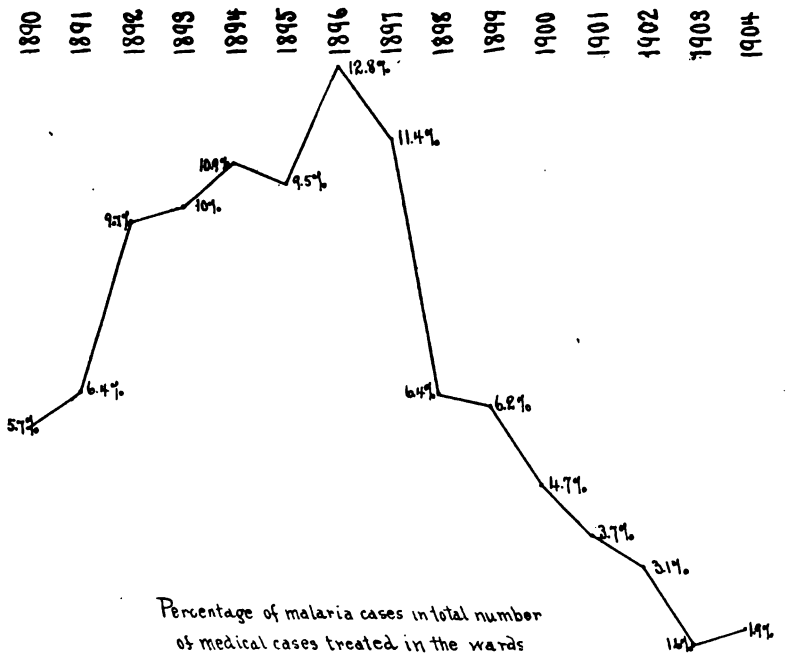
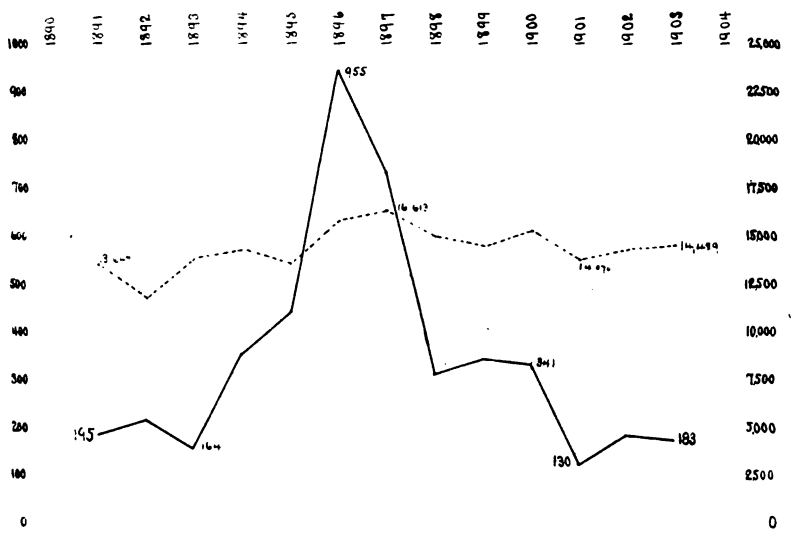


Percentage of malaria cases in total number of medical cases treated in the wards of the Johns Hopkins Hospital 1890-1904 (inc.)

No. 2.



Solid line: Total cases of malaria treated in J.H.H Dispensary

Broken line: Total medical cases treated in J.H.H Dispensary

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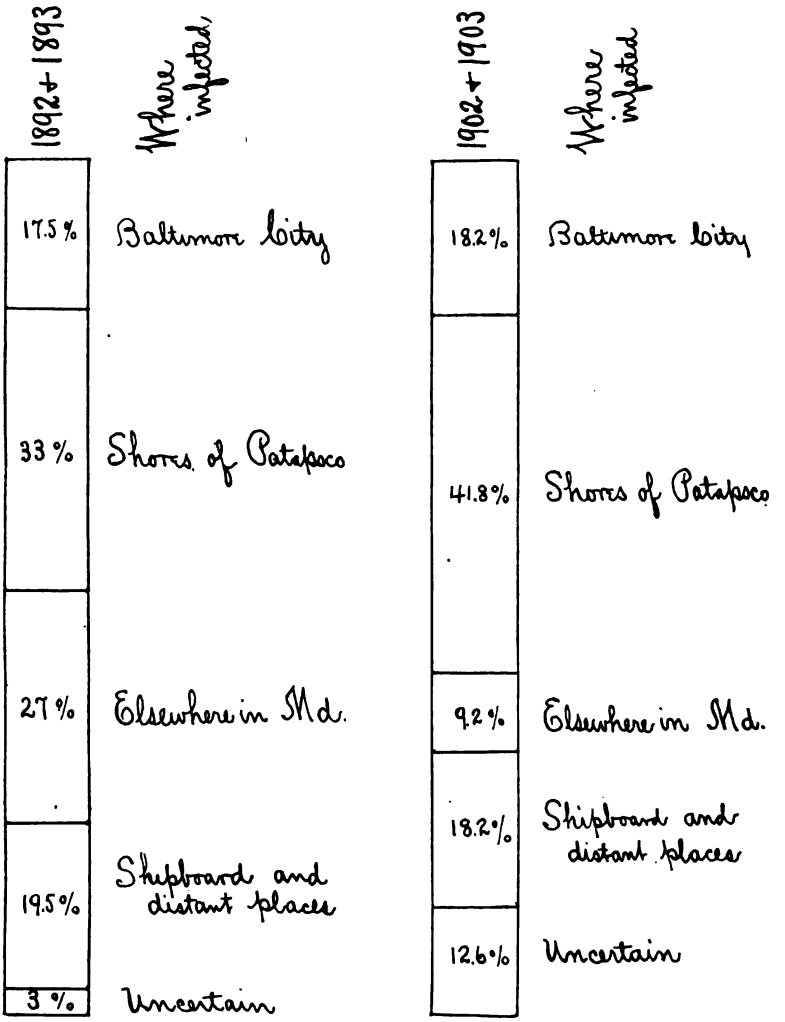

Showing sources of infection of cases of malaria in the medical wards of Johns Hopkins Hospital in 1892-1893 and 1902-1903.

Total no. of cases 1892-1893 = 164
" 1902-1903 = 55

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FRACTURE OF BEAK-SHAPE PROCESS OF UPPER EPIPHYSIS OF THE TIBIA— REPORT OF TWO CASES.

By H. F. Cassidy,

Baltimore.

In the *Progressive Medicine* for December, 1903, p. 145, Bloodgood first called attention to this rare fracture in a review of Schlatter's communication (*Beitrage zur klinischen Chirurgie,* 1903, Band 38, p. 874). Recently Ware (*Annals of Surgery,* November, 1904, Vol. XL, p. 739) and Winslow (*Ibid.,* Vol. XLI, February, 1905, p. 278) have reported similar cases.

As these three articles considered the literature and the various anatomical points in this fracture, I will confine myself to a short report of two cases observed in my practice.

Case 1.—R. P., aged 15. This patient, a healthy boy, states that about four years ago he fell forward while playing football, striking on both knees in a flexed position. He does not remember any special discomfort at the time of the accident, nor does he recollect distinctly just how long after the accident that pain and swelling appeared in the region of the tubercle of both tibiae. He thinks it was about three months. The swelling was never very marked, and apparently was about the same as now present in the region of the tubercle of the right tibia. The pain was never severe except after unusual exercise or when he attempted to kneel down. Within the last month the right knee has practically given no discomfort, and the left knee but slight discomfort.

Examination.—Fig. 1, a photograph of both kneejoints, shows a definite enlargement in the region of the right tibial tubercle and a slight enlargement in the region of the left. On palpation the swellings are of bony consistency, adherent to the tibia, and undoubtedly are in the position of the tubercle, which on both sides is larger, and more irregular than normal. There is no infiltration of the soft parts. The swelling on the right knee is tender, but not so on the left. There is no restriction of motion, and full active extension is possible.

Fig. 2 is a lateral *x*-ray view of the right leg, the one in which the prominence over the tubercle was greater. The irregularity of the tubercle is shown. The light shadow which should be

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Fig. 1—Photo of both knees of Case 1.

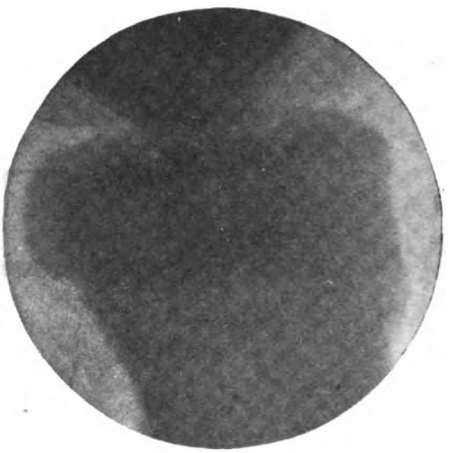

Fig. 2—Lateral x-ray of right knee of Case 1.

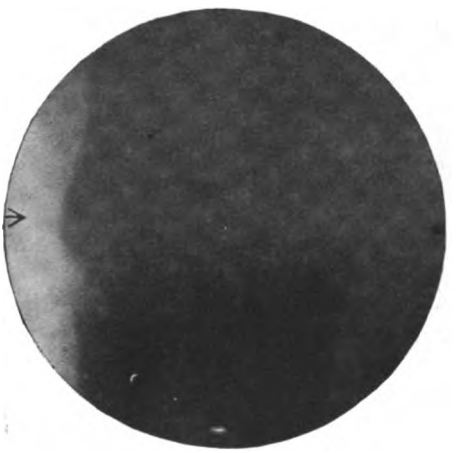

Fig 3—Lateral x-ray, left leg of Case 1.

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present between the shaft and the beak-shape process is obliterated by an irregular growth of porous bone. There is also an irregular shadow of some new periosteal bone over the base of the beak-shape process. The fracture has undoubtedly healed. The slight swelling, pain, and discomfort can be explained by the areas of periosteal bone formation, which up to the present time have not been absorbed.

Fig. 3 is an *x*-ray lateral view of the left leg, the one in which the swelling over the tubercle was less and in which pain and tenderness had disappeared. The *x*-ray demonstrates that the beak-shape process is completely united with the shaft by osseous union, and the two portions of the beak-shape process which at this age should be separated by cartilage are now united by bone. There is no evidence of irregular periosteal bone formation.

These *x*-ray studies therefore demonstrate why there is still discomfort in the right knee and none in the left.

Case 2.—E. E., aged 15. This boy three years ago fell forward on the right knee, since which time there has been an area of tenderness and swelling in the region of the right tubercle. At the present time there is still some tenderness, but not sufficient to interfere with function.

Examination.—Fig. 4, a photograph of both knees. The swelling over the tubercle of the right knee is not quite as marked as that illustrated in Fig. 1, the right knee of Case 1. There is no swelling in the region of the tubercle beyond normal of the left leg. The *x*-ray studies demonstrate that the tubercle and beak-shape process of the left knee are normal (see Fig. 5). The shadow in this case corresponds to Schlatter's *x*-ray illustration for the normal at this age. The faint cartilage line between the two portions of the process and the line between the beak and the shaft are fairly clearly shown in Fig. 5. (Unfortunately, this is not a very good *x*-ray picture.) Fig. 6 shows that there has been a fracture of the beak, with osseous union and an irregular formation of bone between the beak and the shaft and beneath the periosteum over the tubercle.

At the present time, June, 1905, about six months since the photographs and *x*-ray pictures were taken, the two patients have experienced no decided change in symptoms. Neither boy suffers enough discomfort to desire any treatment.

Remarks by Dr. Bloodgood: I saw these two patients through the courtesy of Dr. Cassidy. I was particularly interested in this rare lesion, and up to this time had never recognized a case clinically, although I had made the diagnosis in June, 1904, from an *x*-ray plate sent me by Dr. Winslow of Seattle, Wash.

Dr. Cassidy's first case is of interest because it is a bilateral lesion.

Winslow's patient was a boy of about the same age, also with a bilateral lesion, but in Winslow's case there was no history of injury, and the trouble apparently had been present two and one-

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Fig. 4—Photo both knees of Case 2.

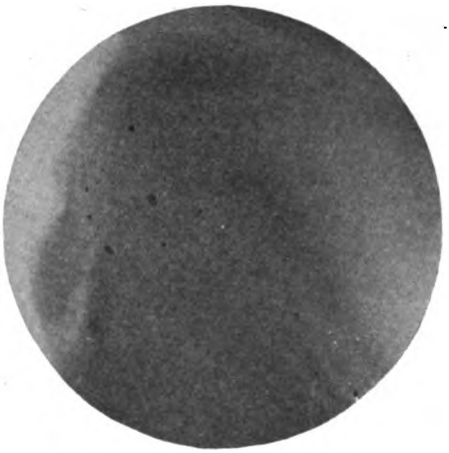

Fig. 5—Lateral x-ray tibia, left knee, normal, Case 2.

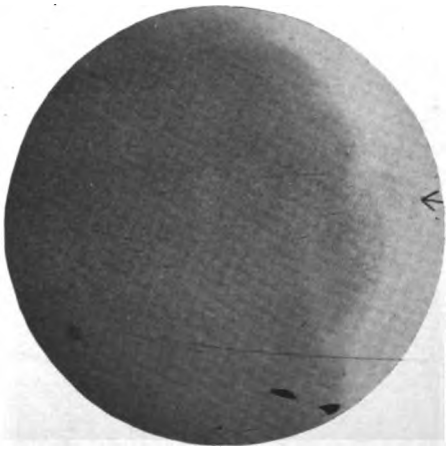

Fig. 6—Lateral x-ray tibia, right knee, Case 2.

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half years following an attack of fever, with pain and swelling in many joints. When the lesion is bilateral the differential diagnosis without the aid of an *x*-ray from a new growth is not at all difficult, but when the swelling is unilateral, as in Cassidy's first case and in all of Schlatter's cases, the possibility of a new growth must be borne in mind. In these cases, however, I am inclined to think that in every instance a lateral *x*-ray will allow a positive diagnosis. Ware's case (*l. c.*) is of interest, because the injury was recognized in its recent state. The patient came under his observation six hours after the trauma. Although the patient was treated properly for a fracture, it was several months before complete function was restored. The observation of Ware apparently demonstrates that if these patients are seen and the injury recognized and treated for a fracture, they will be relieved of the very long period of discomfort which has been observed in all of the patients who received no treatment, or at least proper treatment, directly after the injury. Winslow's case is of interest because it is the only one subjected to operative interference. He writes: "At operation there was found an area of softened, spongy, and much-infected bone, perhaps as large as a silver dollar, covered with greatly thickened periosteum under the seat of each external protuberance at the head of the tibia. The softened diseased bone was scraped away to a depth of perhaps one-third of an inch, and the periosteum and skin were approximated without drainage."

The relief of symptoms in Winslow's patient, who had been suffering discomfort for at least two years, was much more rapid and complete than in the cases not subjected to operation reported by Schlatter. Winslow states that his patient was walking in three weeks, and perfectly well in a few weeks longer.

I am inclined to the opinion that this injury of the beak-shape process of the tibia before ossification is frequently overlooked.

REGISTRATION OF BIRTHS.—In Europe a birth-certificate is an exceedingly valuable document, and must be exhibited when a passport is required or the individual is a candidate for certain public positions. Inability to produce one frequently interferes with the attainment of the desired object. Probably an instance which has recently occurred will be all that is necessary to prove to physicians the necessity of conforming to this provision of the municipal code. About 25 years ago an English family living in this city had a son born to them. The physician, who has since died, made no report of the birth to the Health Department. The family returned to England, and about a year ago the son applied for admission to a military institute. A requirement for admission was the birth-certificate. Our Health Department had no record. The nurse in attendance at the birth was found, but her sworn statement was not sufficient. The books of the doctor were searched, but no mention of the birth was recorded. The young man was not able to obtain admission.—*Cincinnati Lancet-Clinic.*

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Current Literature.

REVIEW IN MEDICINE.

Under the Supervision of Thomas R. Brown, M.D., Baltimore.

RECENT WORK ON THE BLOOD IN HEALTH AND DISEASE — THE LEUCOCYTES.

So much work of interest and importance to those interested in the changes in the blood in health and in disease has appeared during the past year that it will perhaps be of interest to review briefly some of the important works in this connection.

"Standard Records of the Leucocytes in Normal Blood" is ably discussed by Hewes (*Boston Medical and Surgical Journal,* December 29, 1904). The method advised by him is to count the leucocytes in a certain number of fields of carefully-prepared stained specimens. He has standardized his results by comparison with the counts obtained by the use of the Thoma-Zeiss instrument. In his work he used a No. 3 eyepiece and a one-twelfth oil-immersion Zeiss objective. Thirty cases in all were studied by Hewes, and his results were as follows:

From 40 to 90 leucocytes per 100 fields represented the normal limits; more than 90 leucocytes per 100 fields is suggestive of leucocytosis, while 100 or more is a sure indication that the leucocytes are increased. The counts were always higher in the afternoon. As regards the number per c. mm. these figures represent, Hewes found that 50 leucocytes per 100 fields corresponded to 8000 per c. mm., and on this basis the afternoon count averaged from 3000 to 4000 more per c. mm. than the morning count. As regards the percentages of the various forms, he found that the mononuclear and transitional forms comprised from 21 to 49 per cent. of the leucocytes, the neutrophiles from 52 to 78 per cent., the eosinophiles from ½ to 6 per cent., and the mast cells from 0 to 1 per cent. The relative proportions of the various forms were practically the same in morning and afternoon specimens.

The nature and significance of leucocytosis is discussed at length by Holmes in the *Journal of the American Medical Association* (January 28, 1905). The views which he endeavors to maintain from the consideration of a number of cases in which blood-counts were made with care and frequency are that leucocytosis is the evidence on the part of the organism to protect itself against deleterious influences, that the cells met with in leucocytosis belong chiefly to the phagocytic group, and that the ability of the organism to endure a severe or prolonged infection may be estimated

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from the number and proportion of the small lymphocytes present in the circulating blood. According to Holmes, the greater their number or proportion the better the organism's defensive properties.

Helly (*Wiener klinische Wochenschrift*, No. 23, 1904) has performed an interesting series of experiments regarding the specificity of the various forms of white-blood corpuscles. He injected various bacterial cultures or their toxines into rabbits, killed them 24 hours after the injection, and carefully studied the various exudates, blood-forming organs, etc. He found that each variety of white-blood cell responded to a special agent, that is, he demonstrated the specificity of the leucocytes. From his investigations he also concluded that the lymphocytes are capable of ameboid movements.

Regarding the movement and emigration of lymphocytes, the work of Wlassow and Sepp (*Virchow's Archiv*, CLXXVI, page 185) is of interest. From their series of investigations the authors conclude that these cells under normal conditions are not capable of locomotion, although the protoplasm is contractile. At high temperatures, however (40° C.), they show active movements in themselves, putting out and drawing in pseudopods, but no migration. From 42° C. to 46° C. a diminution of these contractions is noted. At 44° C. some begin to flatten out and move, and this is also noted after the use of placental extract, peptone, etc. Their conclusions, therefore, are that movements never occur in the lymphocytes under normal conditions.

In regard to the lymphocytes, the view of Patella (*Riforma medica*, January 15, 1905) is interesting. He believes that true, large lymphocytes are extremely rare in the blood, and that most of the large mononuclears met with in the circulation are cells derived from the endothelial cells of the blood-vessels by a shedding process. He claims to have shown that these cells reduce silver salts, which, of course, would be an argument in favor of their endothelial origin. He also believes that they are increased in diseases of the heart and of the arteries.

As regards the part played by the spleen in the formation of white-blod cells, the work of Carstens (*Medical Record*, January 7, 1905) is suggestive. He studied carefully the blood of two men from whom the spleen had been removed, and he found that the leucocytes were absolutely normal in all respects both as regards total number and relative amounts of the various forms. This work of Carstens agrees with that of Goodall, Gulland, and Paton (*Journal of Physiology*, Vol. XXX, page 1), who performed a series of experiments in regard to digestion leucocytosis in dogs from which the spleen had been removed. They found that the leucocytosis during digestion was just as great in such dogs as

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in normal specimens. In this digestion leucocytosis the increase of the lymphocytes was most regularly met with.

As regards the chemical and physical properties of the leucocytes, a number of recent articles should be mentioned. Thus Christian (*Deutsches Archiv für klinische Medicin,* Vol. LXXX, Parts 3-4) showed that the leucocytes of one species of animal are very much more resistant than the blood corpuscles to the blood serum of another species of animal; in fact, in most cases they seem little, if at all, affected, the one exception to this rule being when the leucocytes of the dog are treated with hen's serum. He found, however, that leucotoxins were formed by previous injection into the animals of extracts of spleen, liver, or kidneys of other animals. Thus he found that mouse blood was toxic for rat's leucocytes after the injection of an infusion of rat's spleen.

The action of leucocytes of one species of animal on the red-blood corpuscles in another species has been recently studied by Respravy (*Ceské Akademie,* II, kl. XII, No. 2). He injected an emulsion of red-blood corpuscles of the hen into the peritoneal cavity of the guinea-pig and then examined the peritoneal exudate. The red-blood corpuscles were found especially in the polymorphonuclear neutrophiles, and very occasionally in the eosinophiles and large mononuclears. The red-blood corpuscles ingested had undergone a change of color, which suggests that possibly a ferment may be formed by the leucocytes.

The iodine reaction of the leucocytes, which was so much studied a few years ago, has recently been again investigated by Hirschberg (*Zeitschrift für klinische Medicin,* LIV, page 223). As will be remembered, Kaminer had regarded the intracellular iodine reaction as an evidence of infection or intoxication with some form of bacterial poisoning, while Wolff, making use of a better method, was able to demonstrate glycogen in every case of human blood examined by him irrespective of disease. Hirschberg has improved Wolff's vital method of staining, and has obtained exactly similar results. He obtained the iodine reaction, both intracellular and extracellular, in the blood of all healthy men and many animals. This was especially found to be so in the case of the polymorphonuclear neutrophiles. That this is true glycogen, however, is not proven. He found that under normal conditions the material that gives this reaction, whatever its exact chemical nature, is more soluble than in cases of infection, which accounts for the early mistakes made.

As regards the value of blood examinations in surgical diagnosis, we feel that this procedure has long ago passed the experimental stage, although some of our surgical brethren are still without the breastworks. Sonders (*Medical Record,* March 25, 1905) has recently made a large number of studies, first to determine the average number of leucocytes under normal conditions, and afterwards the variations from this normal under certain path-

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ological conditions which fall within the domain of the surgeon. His normal figures for healthy adults were 6700 per c. mm., and of this number 62 per cent. should be neutrophiles, 28 per cent. small mononuclears, 7.5 per cent. large mononuclears, 1 per cent. eosinophiles, and .2 per cent. basophiles. From a careful study of 1415 blood examinations made in surgical cases Sonders concludes that three distinct blood pictures may be met with in inflammatory lesions. The first picture, an inflammatory leucocytosis of any degree with a percentage of neutrophiles less than 70, according to Sonders, rules out the possibility of gangrene or pus, and, as a general rule, indicates good body resistance. The second picture, little or no inflammatory leucocytosis, with an increased relative percentage of neutrophile cells, Sonders believes to be an absolute indication of an inflammatory process, the percentage of the neutrophiles being a direct guide to the intensity of the infection. The third picture, and the one usually met with in most inflammatory lesions, whether associated with pus or not, shows a decided inflammatory leucocytosis, with an increase in the relative percentage of the neutrophile cells. Here the percentage of these cells may be regarded as a fairly accurate guide to the status of the inflammatory lesion. Sonders also in this article registers an objection to a too strict adherence to the idea formulated by the Germans that surgical operations should not be performed when the hemoglobin is below 30 per cent.

A case of chylous ascites is reported by Boston (*Journal of American Medical Association,* February 18, 1905) in which he met with an eosinophilia of 25 per cent. He suspected trichinosis, but a careful examination of a portion of an excised muscle showed no parasites.

The changes of the leucocytes in dengue fever has been made the subject of a careful study by Carpenter and Lightburn (*Journal of American Medical Association,* January 21, 1905). From their blood examinations in a large number of cases they conclude that it furnishes facts of great value in differentiating this disease from malaria. According to these authors, the blood picture in malaria is a slight increase of the leucocytes, with a decided increase in the percentage of the large mononuclear forms, while in dengue fever we find a diminution of leucocytes either with a normal differential count or with varying degrees of a small mononuclear lymphocytosis, while late in the disease a marked eosinophilia appears. A consideration of these findings will show that the blood picture which they regard as characteristic of malaria is very different from that obtained in the cases of malaria met with in this vicinity, as well as the results given in most of the textbooks. It is possible, however, that the type of malaria met with in the Isthmian canal zone where these studies were made may be in the main chronic infections with the asetivo-autumnal variety of parasites.

From the blood in pneumonia Rosenau (*Journal of American Medical Association,* March 18, 1905) claims to have isolated the

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pneumococcus in 160 of 175 cases examined by him. From a further examination of the blood in these cases he calls especial attention to the favorable sign in this disease of a high leucocytosis, other things being equal, as well as to the rapid production of anemia during the course of this infection.

Considerable work has been done of late on the blood picture after the administration of various anesthetics. Fiodoroff (*Roussky Vratch,* January 22, 1905) has studied the blood in 48 cases of chloroform anesthesia, making his determinations in each case before, during and after the administration of the anesthetic. During the administration of the anesthetic there appeared a distinct increase of leucocytes, although he did not find that it lasted several days, as others have shown in animals. This increase was found to be more marked among the young forms. Thus an increase of young cells was noted in 75 per cent. of the cases, while the mature cells were increased in only 50 per cent. of the cases, although in some of these cases their increase was very marked. As regards the senile cells, that is, the polymorphonuclear neutrophiles, their increase was insignificant as compared with the others. It will be remembered in this connection that most observers have found a marked increase of neutrophiles in the case of ether anesthesia.

In pregnancy the changes in the leucocytes have recently been studied in considerable detail. Payer (*Archiv für gynäkologie,* LXXI, page 421) studied the leucocytes carefully in 21 cases, besides thoroughly reviewing the literature on this subject. From this he concludes that the leucocyte picture in pregnancy is a moderate increase of the white-blood cells, with a sudden rise at the time of birth. Pankow (*Ibid.*, LXXIII, page 227) also found this increase of leucocytes during labor. According to him, in from 12 hours to 3 days the blood is again normal.

In gynecological diseases this last investigator has made very careful blood-counts, 28 cases in all being thoroughly investigated by him. According to these investigations, in all inflammatory diseases of the tubes and ovaries a repeated leucocyte-count greater than 10,000 means pus if no other cause of a leucocytosis is present. In chronic inflammatory troubles, however, pus cannot be excluded, although the leucocytes are less than 10,000. According to Pankow, the study of the leucocytes is of more use than the temperature curve in determining whether or no pus is present in doubtful cases. In 14 cases of uterine carcinoma studied by him an absence of leucocytosis was the rule, while in uterine myoma leucocytosis was only met with in those cases in which much bleeding had occurred. The conclusions of Waldstein and Feldner (*Wiener klinische Wochenschrift,* XVI, 28) are that leucocytosis is present in pyosalpinx and pyoovarium, while it is not present in tubal or ovarian tumors where no pus is present. In cases associated with a marked loss of blood leucocytosis was also present, and the degree of the leucocytosis furnished a fair criterion of the extent of the bleeding.

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PROCEEDINGS

OF THE

MEDICAL AND CHIRURGICAL FACULTY

OF MARYLAND

Editorial and Publishing Committee.

ALEXIUS MCGLANNAN, M.D. HENRY O. REIK, M.D. JOHN RUHRAH, M.D.

Secretaries of the County Societies are earnestly requested to send reports of meetings and all items of personal mention and of local or general interest for publication addressed to Dr. Alexius McGlannan, 847 North Eutaw Street, Baltimore.

THE SEMIANNUAL MEETING. — The program committee has completed most satisfactory arrangements for the fall meeting of the Faculty. The experience for the past two years in holding these sessions at popular resorts proved so generally satisfactory that the same plan has been followed again, and this time Deer Park is selected as the place of meeting, and Thursday, September 21, and Friday, September 22, as the dates. The Baltimore & Ohio Railroad offers all members of the Faculty and also members of their families a special excursion rate of $5 from Baltimore, tickets to be good from Thursday morning and without limit as to return date, and the Deer Park Hotel makes a special rate of $2 per day during this time. The real extent of these courtesies is only understood when it is remembered that the regular excursion rate is $9 and the hotel charge $4 per day, and it is hoped the Faculty will show appreciation of these favors by taking advantage of the opportunity to spend four or five days in this charming mountain region. A special excursion rate, not yet exactly determined, will be granted to those starting from Frederick, Hagerstown, and Cumberland.

Coming, as this meeting does, at the close of the summer vacation and just prior to the opening of college work and the fall increase in practice, it affords an excellent opportunity to enjoy a period of rest and to take a brace for the long winter struggle. Every physician owes it to himself and to his clientele to maintain

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his own perfect physical condition, for it is only by so doing that he can act at his best in all the complicated mental problems that confront him. The professional man, whose stock in trade is his brains, who works steadily 12 months in the year, is not a safe adviser. It is not only a pleasure to take a vacation in the summer; it is a good business investment. There are few more charming spots for rest and recreation than Deer Park, situated on the very summit of the Allegheny mountains.

Trains leave Camden Station, Baltimore, at 9 A. M., 4.30 P. M., and 11.10 P. M., arriving at Deer Park at 4.41 P. M., 11.39 P. M., and 7 A. M., respectively. The last-mentioned train carries a through sleeper.

MEDICAL ORGANIZATION.—The Medical and Chirurgical Faculty of Maryland is in better condition today than ever before. It has more members, owns more property, and wields more influence than it has since its organization. In every county, except one, there is a medical society, and while all of them are not yet running as smoothly as might be desired, the work of the past two years has been much more successful than even the most sanguine dared hope.

Those who attended the meeting of the Baltimore City Society (the city part of the Faculty) in April and listened to the remarks on organization certainly were made keenly alive both as to the necessities and benefits of a united profession.

Too many years of strife, discord and petty jealousies have made rivals and enemies of those who should be brothers and friends. We should all stand together on a firm basis, not only for the spiritual and ethical strength it gives the profession, but also for the baser, though none the less important, purpose of utility.

Leaving out the questions of the medical society as an educational factor, let us look for a moment at the material side of the question.

What is the problem that confronts us? A State which permits we might almost say unlicensed practice, which by the weakness and futility of its law or its officers permits quacks and pretenders, abortionists, and charlatans to reap a rich reward from the ever-willing-to-be-fooled public, which permits to flourish in our midst a pseudo-medical institution, conferring degrees of many kinds upon the ignorant and unqualified.

What does all this mean? In plain every-day English it means that the medical profession is asleep, is apathetic, is blind not only to its own interests, but also to those of the public at large. The reputable physician must study four years, pass a State examination, and laboriously try to earn a living doing honest, careful, painstaking work, and has as competitors the advertising and unscrupulous practitioner who promises the impossible and extorts from the unwary and ignorant money which, if it is used for med-

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ical aid at all, had better be used to purchase honest advice, and not a worthless imitation.

The injustice is not only to the medical man, but also to the public. The wisdom of Polonius should sound in our ears: "To thine ownself be true, and it must follow, as the night the day, thou canst not then be false to any man."

The public cannot be expected to aid in the struggle. The public does not value the medical profession as it should, and probably never will. We can be certain that it never will until the profession puts a value upon itself. A profession that sits idly by and watches its rights being stolen by the most barefaced of scoundrels is not calculated to enlist the sympathies of the public. If any other profession or trade were so assailed, there would be unions, strikes, and what not. It is high time that we put aside indifference and look the question fairly in the face. In Germany and France the profession is fighting quackery, and we should do it here. If we must study four years to learn our profession, and pass examinations to assure a public that we know what we profess, then it is no more than just that the same public be made to realize that we demand that all others do the same thing.

This is no Utopian dream. It has been done in other States, notably in Kentucky, and it should be done here. There always will be quacks and charlatans, but if they must be, let us make them conform to the law as far as educational and other requirements are concerned. This measure alone would rid us of hundreds of illegal practitioners, herb doctors, and the like. The patent-medicine evil and the advertising abortionists and other public medical nuisances would also to a certain measure be abated.

How can this be accomplished? By organization, by enlisting the support of every reputable practitioner in the State, by drafting and passing an efficient law, by taking active legal measures to see that it is enforced, by putting aside our little differences and securing what we all need—unity and concord.

How can you help? By seeing that your neighbor joins the Faculty, by attending its meetings, and when the time comes by asking aid of your friends in the legislature, in the grand jury, and on the bench.

WHAT THE FACULTY OFFERS.—Never before has the Faculty offered as much for the money as today. We have a superb library, a medical journal, defense in alleged malpractice, and the benefits of medical organization. Two dollars a year from county members and $7 a year from the city members secures for the reputable practitioner what would otherwise cost him many times that amount.

The JOURNAL alone costs $2 a year, physician's defense from $15 to $20; library facilities are hard to estimate, but may be said at a low rate to save $20 to $50 in books and journals. The benefits of medical organization and of the medical society are becoming recognized and are mentioned in another column.

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DEFENSE IN ALLEGED MALPRACTICE.—The Faculty now offers to its members who pay their dues in advance defense in alleged malpractice. Mr. James U. Dennis, Jr., 102 East Lexington street, has been retained as counsel for the Faculty. Dr. Dennis has given the subject of medico-legal matters considerable attention, and has conferred with Mr. James F. Lewis, counsel for the Medical Society of New York.

The following amendment to the by-laws regarding the matter was passed by the House of Delegates:

"To amend Chapter VII of the By-Laws by the addition of Section 6, as follows:

"SEC. 6. The Council shall, upon request and in compliance with the conditions hereinafter named, assume the defense of suits for alleged malpractice brought against members of the Faculty.

"*Conditions: a.* Any member desiring to avail himself of the provisions of this section shall, as soon as possible after any demand has been made upon him or any suit instituted against him, present to the Council his request for defense, and, together therewith, a full and complete history of the case, the services rendered, and his further connection with or relationship to the plaintiff. Should the Council conclude that his claim for defense is valid, he shall sign a contract renouncing his own and vesting in the Council sole authority to conduct the defense of said suit, and agreeing to make no compromise or settlement of the case without the consent of the Council given in writing and signed by its proper officers.

"*b.* The Council shall thereupon contract with said applicant to take full charge of said suit, to furnish all necessary legal services, to furnish all medical-expert services, and pay all necessary expenses of the accused; provided that the Council shall not obligate the Faculty to the payment of any damages awarded by decree of court or upon compromise.

"*c.* The Council shall not undertake the defense of any suit based upon an act committed prior to May 1, 1905, nor before the date of qualification of the accused as a member of this Faculty. Furthermore, no member shall be entitled to the privileges of defense by the Council whose dues to the Faculty are not paid in advance, as elsewhere provided in the constitution and by-laws.

"*d.* Such medico-legal defense as is herein contemplated refers only to suits for alleged malpractice, and is in no sense meant to cover criminal abortion, feticide, homicide, or other criminal act.

"*e.* The Council shall have authority to appoint an attorney-at-law for the term of one year to represent the Faculty in all suits for malpractice and similar threats against its members, and to determine his compensation."

THE COUNCIL ON PHARMACY AND CHEMISTRY is an advisory board organized by the board of trustees of the American Medical Association to examine into the composition and status of the various preparations offered to physicians which are not included in

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the United States Pharmacopeia, in other standard textbooks or formularies.

The Council on Pharmacy and Chemistry will collect all available information concerning these preparations, and will decide their ethical status. The Council will not give judgment on therapeutic value, nor will it presume to dictate what preparations should be prescribed. Ten rules have been formulated to govern the matter, and preparations which conform to the standard made by them will be included in a book entitled "New and Non-Official Remedies," to be published by the *Journal of the American Medical Association.* The rules and the plans of the Council were published in full in the above journal.

The great growth of these preparations in recent years, and the almost hopelessness of separation of the good from the bad by the individual doctor, make the need of an authoritative book of reference on the subject very great. The work will be made as complete as it is possible to have it; indeed, its value will be directly proportionate to its completeness. Omission from the book must not be considered condemnation, nor must inclusion be looked on as endorsement. Necessary and desirable information will be given concerning desirable preparations.

As might be expected, this plan has already met with the opposition of some of the manufacturers of proprietary remedies. One of these, the maker of a fancy-named medicine, calls in Scriptural quotation for the authority of the Council to investigate the formula of his remedy. After mentioning the number of testimonials received from members of the American Medical Association, the representativeness of the Council is questioned, and the great body of more than 100,000 non-members called on. Then the eagle is made to scream, and the terrible influence of State rule of all actions of mind and body, so common abroad, is held responsible for this attempt at investigation. "Let us in America have none of it. Eternal vigilance is the price of liberty."

This conservator of our nation and its institutions objects to informing the physician of the exact nature of the preparation he is asked to prescribe, and, crying aloud against an imaginary attempt to force a muzzle on him, wishes to actually blindfold the doctor.

THE PATENT-MEDICINE EVIL is beginning to attract the attention of reformers outside the medical profession. The editor of a prominent periodical has recently opened a vigorous warfare on these nostrums by publishing the results of the analysis of several of the more widely-advertised preparations. Those which were shown to be perfectly harmless were also shown to be absolutely worthless and to be frauds of the most barefaced kind. The others, the purely-vegetable, no-alcohol, no-mercury, or dangerous-drugs

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variety, were shown to consist of such innocent and innocuous natural products as the opium alkaloids, cocaine, strychnine, acetanilid, the bromides, mercuric salts, and similar substances. Almost all the liquids were found to contain from 5 to 50 per cent. alcohol.

The eloquence of some prominent citizens following a dull dose of a much-advertised nerve tonic, as testified to by themselves in heavy type, with picture, is not surprising when the amount of alcohol involved is considered. The heads of temperance organizations, the eminent divines, and officers of religious societies who testify to the merits of the cure for all the ailments of the human body must be surprised when informed what is the true source of the surprising restoration of energy which always followed a dose of the sovereign remedy.

How much harm is done by this class of remedies is difficult to estimate. Certainly, many cases of drug habit owe their origin to the persistent use of some popular catarrh cure or nerve tonic. The sale of stomach bitters and similar liquid remedies is always greatest in local-option districts.

The crusade against these dangerous or fraudulent articles has been begun by the editor of the periodical referred to above. The duty of the medical profession is plainly to give all aid to the movement. As conservators of the public health we must urge the passage of laws which will require the publication of the quantitative formula on the label of every remedy sold direct to the public.

MEMBERS OF THE HOUSE OF DELEGATES particularly should keep in mind the importance of attending this meeting of the Faculty. At the recent annual session a special committee was appointed to draft a new medical-practice act, and if its passage is to be secured at the next session of the legislature it can only be done by the united efforts of members of the profession in support of a measure upon which all are agreed. This committee will report at the semiannual meeting, copies of such report being distributed to members of the House of Delegates prior to that time, and every member of the House should make himself thoroughly familiar with every detail of the proposed act and be prepared for intelligent discussion and definite action upon the subject at that time.

THE MEMBERS OF THE FACULTY wishing to submit papers for the semiannual meeting at Deer Park, September 21 and 22, will kindly communicate with Dr. Jeffries Buck, 1127 North Caroline street, chairman of the committee of arrangements, before August 20. No papers can be received later than that date.

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MINUTES OF THE HOUSE OF DELEGATES.

The seventh meeting of the House of Delegates was held in the Hotel Stafford Thursday, April 27, at 9 A. M.

Dr. Earle presided. There were present Drs. A. D. Smith, Brayshaw, Chaney, Norris, F. B. Smith, Williams, Hines, Griffith, J. B. Seth, Jones, J. D. Blake, Neff, Harlan, O'Donovan, Ruhräh, T. A. Ashby, Winslow, Reik, Birnie, Scott, D. C. R. Miller, and W. Brinton.

The minutes were read and approved.

The treasurer's report was read by Dr. Ashby. It was approved and referred to the Council.

Dr. B. W. Goldsborough and Dr. Arthur Hebb were nominated for the position of medical examiners.

The following officers were elected:

President—Dr. Samuel T. Earle, Jr.

Vice-Presidents—Drs. C. O'Donovan, city; T. M. Chaney, Chaney, Calvert county; Joseph B Seth, St. Michaels, Talbot county.

Secretary and Treasurer—Dr. John Ruhräh.

Board of Trustees—Dr. Wilmer Brinton.

Councilors, Western Shore—Drs. J. W. Leitch, Huntingtown; T. H. Brayshaw, Glen Burnie; Arthur Williams, Elkridge; W. P. Miller, Hagerstown.

Councilors, Eastern Shore—Drs. Paul Jones, Snow Hill, and W. F. Hines, Chestertown.

Councilors, City—Drs. T. A. Ashby, R. W. Johnson, Hiram Woods, Wm. H. Welch, T. S. Latimer.

Committee on Scientific Work and Arrangements—Drs. J. Buck, Arthur P. Herring, and John Ruhräh.

Committee on Public Policy and Legislation—Drs. Wm. H. Welch, J. W. Chambers, J. D. Blake, Samuel T. Earle, Jr., and John Ruhräh.

Library Committee—Drs. G. J. Preston, H. B. Jacobs, Stewart Paton, J. W. Williams, and J. N. H. Rowland.

Memoir Committee—Drs. J. T. Smith, F. D. Sanger, H. H. Young, Philip Briscoe, and E. L. Whitney.

Committee on Fund for Relief of Widows and Orphans of Deceased Members—Drs. E. F. Cordell, J. W. Chambers, R. W. Johnson, D. W. Cathell, and T. S. Cullen.

Auxiliary Congressional and Legislative Committee of the American Medical Association—Dr. John S. Fulton.

Delegates to the American Medical Association—Dr. Randolph Winslow, two years; Dr. R. P. Smith, one year. Alternates—Drs. I. J. McCurdy, Frederick, and Horace Simmons, city.

Committee on New Medical Law—Drs. J. McP. Scott, B. W. Goldsborough, W. H. Welch, R. W. Johnson, C. Birnie, C. F. Bevan, Samuel T. Earle, Jr., John S. Fulton, and W. F. Hines.

Committee on Midwifery Law—Drs. Guy Steele, J. W. Williams, J. S. Fulton, Sydney A. Stokes, G. W. Dobbin, and W. Brinton.

Members of State Board of Examiners—Drs. B. W. Goldsborough and W. M. Dabney.

On motion of Dr. Johnson a unanimous vote of thanks was given Dr. Ashby for his long service as treasurer.

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Dr. Fulton moved that the following telegram be sent to Mrs. Osler, Dr. Osler's mother:

"The greetings of the Medical and Chirurgical Faculty of Maryland to Mrs. Osler, asking her to share their sentiments in taking leave of William Osler, congratulating Mrs. Osler first on the distinguished career of her son, but most on the innate qualities which have endeared him to his associates in Maryland."

This was unanimously carried.

The motion to amend Chapter VII of the By-Laws by addition of Section 6 was then considered. After discussion by Drs. C. Birnie, Scott, Ashby, Blake, Gardner, Todd, Chaney, and F. B. Smith, Dr. Blake moved that it be amended by changing the third word "may" to "shall." This amendment was accepted by Dr. Reik, and the following was carried unanimously:

To amend Chapter VII of the By-Laws by the addition of Section 6 as follows:

SEC. 6. The Council shall, upon request and in compliance with the conditions hereinafter named, assume the defense of suits for alleged malpractice brought against members of the Faculty.

Conditions: *a.* Any member desiring to avail himself of the provisions of this section shall, as soon as possible after any demand has been made upon him or any suit instituted against him, present to the Council his request for defense and together therewith a full and complete history of the case, the services rendered, and his further connection with or relationship to the plaintiff. Should the Council conclude that his claim for defense is valid, he shall sign a contract renouncing his own and vesting in the Council sole authority to conduct the defense of said suit, and agreeing to make no compromise or settlement of the case without the consent of the Council given in writing and signed by its proper officers.

b. The Council shall thereupon contract with said applicant to take full charge of said suit, to furnish all necessary legal services, to furnish all medical-expert services, and pay all necessary expenses of the accused; provided that the Council shall not obligate the Faculty to the payment of any damages awarded by decree of court or upon compromise.

c. The Council shall not undertake the defense of any suit based upon an act committed prior to May 1, 1905, nor before the date of qualification of the accused as a member of this Faculty. Furthermore, no member shall be entitled to the privileges of defense by the Council whose dues to the Faculty are not paid in advance, as elsewhere provided in the Constitution and By-Laws.

d. Such medico-legal defense as is herein contemplated refers only to suits for alleged malpractice, and is in no sense meant to cover criminal prosecutions nor suits for assault, criminal abortion, feticide, homicide, or other criminal act.

e. The Council shall have authority to appoint an attorney-at-law for the term of one year to represent the Faculty in all suits for malpractice and similar threats against its members, and to determine his compensation.

The amplified offer of the MARYLAND MEDICAL JOURNAL was read, and, on motion of Dr. Blake, seconded by Dr. Winslow, was unanimously carried:

"*To the Council of the Medical and Chirurgical Faculty of Maryland:*

"The Medical Journal Co. agrees to publish in the regular issues of the

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MARYLAND MEDICAL JOURNAL the proceedings, papers, announcements, news items, and other relevant matter furnished by the Faculty as may be decided upon by a joint editorial or publishing committee consisting of the editor of the JOURNAL and the appointees of the Faculty.

"It is further agreed on the part of the Medical Journal Co. to mail regularly each month a copy of the MARYLAND MEDICAL JOURNAL, postpaid, to each member of the Medical and Chirurgical Faculty.

"The Medical Journal Co. also agrees to contribute to the library funds of the Faculty the sum of $400 annually in monthly or quarterly payments, as may be designated by the Faculty.

"The editor of the JOURNAL agrees to contribute from the book and exchange lists from time to time such books, pamphlets, periodicals, and other printed matter as may prove profitable to the purposes of the library.

"In addition to the foregoing, 10 copies of the MARYLAND MEDICAL JOURNAL will be sent monthly, as issued, to the Faculty rooms for the library files.

"On the part of the Medical and Chirurgical Faculty it is agreed to appoint and maintain an associate editor or committee to co-ordinate with the editorial and business management of the JOURNAL in determining upon matter for publication and in so adapting the policy of the JOURNAL as to subserve the highest interests of the Medical Faculty.

"The Faculty agrees further to submit all matters for publication in typewritten form and at such times as will regularly meet publication dates to be fixed upon hereafter.

"In consideration of the services to be given by the JOURNAL the Faculty agrees to pay from its funds the subscription rate of 50 cents a year for each member of the Society in annual or quarterly amounts.

"It is understood that present subscription accounts with the JOURNAL by members of the Society will be due and collectible till this agreement becomes operative.

"This agreement will take effect July 1, 1905, and continue till July 1, 1906, to correspond with the fiscal year, and is subject to renewal as may be agreed to hereafter."

Drs. Brush, Blake, and Winslow agreed to turn over to the Faculty their share of stock.

The House of Delegates adjourned.

MRS. OSLER'S REPLY

TO THE TELEGRAM OF CONGRATULATION SENT APRIL 27.*

To S. J. Earle, Esq.: 83 Wellesly Street, Toronto.

Dear Sir—Mrs. Osler, who is unable from her great age to write, asked me to express her heartfelt thanks to you for the very kind telegram of greeting sent through you from the Medical and Chirurgical Faculty of Maryland, and to say that the receipt of the message gave her the greatest pleasure, more especially in the expression of affection and appreciation called forth by the personal qualities of her son, since these are, in her eyes, more precious than all his honors.

She knows that it must be hard for him to sever his connection with such kind *confrères,* and she is sure that the friendships he has made during his residence in the States will be among his most cherished memories. I am, sir, yours sincerely,

JEANETTE OSLER.

* See page 320.

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REPORT OF COMMITTEE ON LEGISLATION.

Mr. President and Members of the House of Delegates:

There having been no session of the State legislature since the last annual meeting of the Faculty, nothing has arisen which has required consideration on the part of the committee on legislation during this period.

WM. H. WELCH,
For the Committee on Legislation.

April 25, 1905.

REPORT OF THE FUND FOR THE RELIEF OF THE WIDOWS AND ORPHANS OF DECEASED MEMBERS.

We are glad to be able to report that this beneficent charity—the only doctors' charity among us—founded by the Faculty two years ago, has continued to increase during the past 12 months not only by contributions from members, but also by gifts from laymen. We again commend it to your favor and interest, asking that you will become contributors to it, now or by *will*, and also interest your wealthy patients in it. As a subscriber well said, "it is wise to have a good amount laid aside for contingencies. Sometimes these arise during the summer when few of the members are at home. It is most satisfactory to be able to raise the necessary amount promptly." Bsides the gifts already announced in our last annual report, we have received the following:

W. Lee Howard	$10 00
Thomas S. Cullen	10 00
Guy L. Hunner	10 00
Mrs. Mollie R. Macgill Rosenburg, Galveston	10 00
Mrs. E. Austen Jenkins	10 00
J. D. Iglehart	5 00
C. A. Penrose	5 00
Charles G. W. Macgill	5 00
Francis W. Patterson	5 00
L. A. Griffith	5 00
Interest	18 18
	$93 18
Previously reported	$792 50
	$885 68

All subscriptions have been paid in except $45.

EUGENE F. CORDELL, Chairman.
WILLIAM OSLER.
J. W. CHAMBERS.
R. W. JOHNSON.
D. W. CATHELL.
Committee.

April 26, 1905.

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REPORT OF THE BOARD OF TRUSTEES OF THE MEDICAL AND CHIRURGICAL FACULTY.

In complying with the new Constitution and By-Laws, the Trustees had their annual meeting February 14, 1905, and organized by electing Wilmer Brinton, chairman, and G. Lane Taneyhill, secretary.

Dr. T. Chew Worthington appeared before the Board as a representative of a committee of medical men, who are members of this Faculty, to acquaint the Board of a plan to secure funds from non-medical subscribers towards the contemplated new medical-library building, and with the special object of furnishing one or two memorial rooms in said building in memory of a former prominent deceased president of the Society. After discussion the following resolution was passed by the Board: "In the construction of the new Faculty building it is the sentiment of the Board of Trustees that certain portions of the building shall be set aside as memorial rooms for individuals, where sufficient funds shall have been subscribed to justify such action, and the committee charged with the collection of funds for the Osler testimonial are authorized to accept subscriptions with this object in view."

In the itemized report of the treasurer of the Faculty will be found in detail the receipts and expenditures of the Board of Trustees during the fiscal year.

It is the opinion of the Board of Trustees that the value of the assets of the Faculty is $55,000.

Building	$15,000
Library	40,000
	$55,000

As this body has the election of one trustee each year, the secretary of the Board of Trustees has requested me to incorporate in this report the names of the present Board of Trustees and their term of office.

Wilmer Brinton until 1905, G. L. Taneyhill until 1906, C. M. Ellis until 1907, I. E. Atkinson until 1908, E. N. Brush until 1909, S. C. Chew until 1910, J. W. Humrichouse until 1911, J. W. Chambers until 1912, H. M. Hurd until 1913, L. McL. Tiffany until 1914.

WILMER BRINTON, Chairman.

TREASURER'S FINANCIAL STATEMENT.

FACULTY.

Receipts.

Balance from last report	$1 55
Dues, membership fees, etc.	3,746 06
Loan from Commonwealth Bank	1,500 00
Rent of hall, Baltimore City Medical Society, for five section meetings	200 00
Rent of hall, non-affiliated societies	76 50
Exhibits	50 00
Donations from four medical schools for library fund	150 00
Donations for Frick Library	250 00
Total receipts	$5,972 56

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Disbursements.

Account of library		$1,538 13
Coal and gas account		346 44
Telephones		109 00
Repairs, etc., to property		321 59
Insurance on property		92 50
Frick Library		250 00
Legislation committee (1903-1904)		481 00
Banquet committee (1901-1903)		51 42
Janitor's salary on part of Trustees		180 00
Expense of secretary's office (balance 1903-1904)		110 00
Expense of secretary's office		156 57
Expense of treasurer's office		83 30
Postage		120 00
Incidentals		47 90
Deutsch Company, printing, 1903-1904		554 65
Printing transactions		232 06
Editing transactions		25 00
Commonwealth Bank, note		500 00
Commonwealth Bank, interest, etc		55 40
Total expenses		$5,254 96
Balance on hand		$717 60

Debt:

Note, Commonwealth Bank	$1,000 00
Deutsch Company	200 00

BALTIMORE CITY MEDICAL SOCIETY, 1904-1905.

Receipts.

Membership fees	$438 00

Expenses.

Printing notices (Bulletin)	$67 25	
Mailing notices	38 00	
Stationery	7 50	
Typewriting	6 00	
Rent of hall for section meetings	200 00	
Total		$318 75
Balance		$119 25

Balance Faculty	$717 60
Balance Baltimore City Medical Society	119 25
Total	$836 85

T. A. ASHBY, Treasurer.

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REPORT OF THE COMMITTEE ON JOURNAL.

To the House of Delegates of the
Medical and Chirurgical Faculty of Maryland:

Gentlemen—Your committee, appointed at the semiannual meeting to consider plans for the establishment of some periodical medium of publication for the transactions of the Faculty and its component societies, begs to submit the following report:

Your committee is fully persuaded that the best interests of the Faculty demand that some means shall be provided which will tend to bind the individual members more closely to the organization, which will keep the work of the State Society and of the American Medical Association constantly before the members, and which will supply each member with some definite and tangible "value received" in return for his annual dues. It is true that at the present time the annual dues are small and that the return for them is large when we consider alone the privileges of the excellent library of th Faculty, but to a very large percentage of our membership the library facilities are not available, and to these members especially, if we would hold their interest and secure their active support, we must supply some other inducement to remain in membership, and with all of our members we should connect some direct means of communication. Experience has taught a number of our sister States that the strongest influence for good in these directions has been a State medical journal, owned and controlled by the State Society, managed solely in the interest of its members, and sent to each of them regularly without cost beyond their annual dues.

Upon investigation of the matter we have found it possible in this State to make a choice between two widely-different plans. In the first place, we may proceed to establish a journal of our own, to be known, let us say, as the Journal of the Medical and Chirurgical Faculty of Maryland, which shall be devoted solely to the interests of the members of this State Association. The committee believes that such a journal can be established and sent to each member of the Faculty without cost to him and without taxing the treasury of the Faculty. That is, we believe the income from the advertising pages of such a journal will pay the entire cost of its publication. It is estimated that for each page of advertising we can publish three pages of printed matter, viz., one page of advertising and two pages of reading matter. Thus a 60-page journal could be supported upon 20 pages of advertising, and while we may not be able to begin with so large a journal, it seems quite feasible to start with a journal of 40 pages and gradually increase the size as the income from advertising grows. This plan has been adopted in 14 other States, prominent among these being New York, Pennsylvania, New Jersey, Kentucky, Indiana, Illinois, and Michigan, and, so far as we can ascertain, the plan has been a success in every instance.

Our Faculty differs from most State societies in that it owns and must maintain a very valuable medical library. Fortunately, the establishment of our own medical journal would greatly favor our library, and through the benefits conferred indirectly upon the library the Faculty would profit

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more largely than has been indicated above. All of the new books coming to the Faculty journal for review and the numerous medical journals—weekly, monthly, quarterly, etc.—would become the property of the library and thus enable us to save a considerable sum of money now expended annually for the purchase of such books and magazines. Furthermore, the publication in such a journal of all the papers, business proceedings, and news items of the Faculty and the city and county societies would enable us to dispense with the issuance of the old annual volume of transactions, and would still provide every member with a more accurate record of the transactions of the profession throughout the State. It is impossible to state in exact figures what the saving to the Faculty would be under this plan, inasmuch as there is no means of determining accurately what new books will be sent us or what journals we may be able to secure in exchange, but your committee believes that if the Journal can be made self-supporting, and it has no reason to doubt this, then the Faculty will gain financially the $300 now spent annually for the publication of its transactions and approximately $300 out of the fund now expended annually for the purchase of new books and periodicals.

The second plan to which we referred is embodied in the following proposition submitted by the MARYLAND MEDICAL JOURNAL, which is intended to accomplish the same ends, and which provides that we shall recognize the MARYLAND MEDICAL JOURNAL as the official organ of publication of the Faculty.

You might reasonably expect that the committee should recommend one or the other of these plans for your adoption, but there are so many important things to be considered in this decision that we have hesitated to assume that responsibility, and deem it best to lay both plans before you and to ask you to determine for yourselves which plan you prefer.

To summarize in a distinct and unbiased way the features of the two plans, and to state the matter in a brief businesslike manner, we would say that the plan proposed by the MARYLAND MEDICAL JOURNAL means sufficient space in that JOURNAL for the publication of Faculty matters; the delivery of the JOURNAL to every member of the Faculty in the State; the donation to our library of such new books and periodicals as the editorial staff of the JOURNAL may be willing to spare from those which they receive for review and in exchange, and, as value received therefor, the payment to the JOURNAL of the sum of $100 per annum from the Faculty's treasury. (It must be remembered that this gives us no control over the policy of the JOURNAL, either in its business or editorial pages, save in so far as Faculty matters are concerned, nor do we assume any financial obligations other than the payment of the sum stated.)

The other plan means the establishment of a journal of our own, managed and controlled solely in the interest of the members of this Faculty; delivered without extra cost to every member; containing more of the information that is of vital interest to the members than can possibly be given through any other medium; no expenditure of money from the treasury, but, instead, the saving of from $300 to $600 per year that is now being expended on new books, journals and the transactions.

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Society Reports.

THE JOHNS HOPKINS HOSPITAL MEDICAL SOCIETY.

MEETING HELD APRIL 17, 1905.

The meeting was devoted to comparative surgery, a report being made of the work done in the course in operative surgery on animals by the third-year class of the Johns Hopkins Medical School. Dr. Cushing, by way of introduction, emphasized the importance of building up a veterinary hospital in connection with surgical teaching, not only for teaching purposes proper, but also by way of disarming the criticism, perhaps a just one, which was made against the reckless use of material involved in allowing students to operate on healthy animals. Operative surgery was usually taught by work on the cadaver. It was therefore confined to operations on the extremity and ligation of arteries. But the absolutely essential instinct for surgical cleanliness, the ability to handle living tissues, skill in controlling hemorrhage—these things could not be learned from cadavers, nor was it possible to teach or to learn visceral surgery in this way.

When the course in animal surgery at the Medical School was started operations were done for hypothetical lesions. The material was not then necessarily wasted, but could often be used in one of the laboratories. A gastrostomized dog, for instance, furnished the physiologists with gastric juice for study, and so forth. Nevertheless, this method involved needless operation, and criticism of this feature only began to be disarmed when animals were brought in with lesions which needed treatment. For the future, then, the plan is to build up a veterinary hospital so that animals may receive necessary surgical attention and students may receive surgical instruction at the same time.

Hemorrhagic Cysts of the Thyroid.—Mr. Faris reported two cases of this condition occurring in dogs. The first was in an Irish setter. It had caused interference with respiration, and cure was effected by its removal. The second occurred in a hound; was associated with bad temper, muscular twitching, loss of hair, increase in weight, and dryness of skin. No exophthalmus was present. The cyst was removed, but without much improvement in the dog's condition. Both tumors proved to be thick-walled cysts containing dark-red grumous material made up of shadows of red-blood cells and cholesterin. The pathology of the thyroid in dogs was said to be similar to that in man. Hemorrhagic cysts, while rare, were occasionally reported. Their etiology was still undetermined. Trauma probably plays a part, and changes in the vessel walls with rupture probably do the rest.

Uterovaginal Prolapse.—Mr. Thacher reported two cases. The first was an acute one, complicating labor in a bitch. The vagina and cervix were prolapsed, the bladder was out of the pelvic, there was inability to urinate, and the animal was in bad condition. A uterus containing nine pups was removed and the prolapse reduced. Death occurred in 15 hours, hydronephrosis and localized peritonitis being present. In the second case an irre-

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ducible mass protruded from the vulva, and two operations were required to cure the condition.

Obstetrical complications were said to be common in animals, and death often occurred without delivery. Acute prolapse was most frequent in the herbivorous animals, and the immediate cause was often a very full uterus.

Inguinal Hernia in the Dog.—These cases were reported by Mr. Beall. The first patient showed an irreducible right inguinal hernia with cystocele, and the radical hernia operation was done. Death occurred on the second day, the dog showing ulcers of the stomach and an atrophied right kidney. The second patient had a bilateral inguinal hernia. The two sides were operated on at intervals, and complete cure resulted. In the third dog the hernia contained the omentum and the round ligament. Hernia in the dog is a very common condition, the commonest variety being the midventral. The inguinal form occurs much more often in the female than in the male, due probably to the occurrence of pregnancy and to the fact that normally a bitch has practically a patent canal of Nuck. In the male, too, the tunica vaginalis retains its connection with the peritoneum, so that the anatomical facts alone do not explain the occurrence of inguinal hernia, which is relatively rare in male dogs.

Canine Tumors.—This series was reported by Mr. Ortschild. The first was an adenocarcinoma of the breast with glandular metastasis. The complete operation was done. Death occurred from cancrum oris. Mixed teratomata over the breast and thorax were found in the second case. These on section showed cartilage, adenocarcinoma, carcinoma simplex, and bone. In another dog a cyst adenoma of the breast was found and removed. This patient died from a phagadenic ulcer of the mouth. In a fourth case a mixed tumor of the breast, which had succeeded to a "milk breast" following a bite, was found and removed. Cure resulted. An intracystic papilloma of the breast with metastases, a fibrolipoma of the vaginal wall, and a hygroma of the right shoulder were also reported. The last tumor of the series was a pedunculated growth arising from the lower abdomen and just swinging clear of the ground when the dog walked. It was removed, and proved on section to be an adenoma. Tumors, particularly carcinomata of the skin and mammal, are common in dogs. Fibromata, enchondromata, and sarcomata of the breast are also seen. Dr. Bloodgood showed the specimen of a melanosarcoma of the liver occurring in a horse.

MEETING HELD APRIL 31, 1905.

Analysis of 221 Cases of Typhoid Fever.—This series was reported by Dr. Thompson of Worcester, Mass. The epidemic had started among workmen in one of the suburbs of Boston, and was traced definitely to a privy infection. The cases were treated at the Boston City Hospital. The majority were males and ranged in age from 8 to 63. Sixty-five per cent. were in the first three decades of life and 5 per cent. gave a history of previous attack. A motley array of symptoms were seen at the onset, but deafness was initial in three cases. The febrile period varied from 7 to 86 days, and relapses occurred in 21 cases. Rose spots were present in 69 per cent., sweats were a striking feature in two cases, and herpes was noted in one case. Twenty-three and one-half per cent. showed a subnormal leucocyte-count. Myocarditis was marked in two cases, thrombosis was seen in seven, infarct of the

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lung in one, and parotitis in two; nausea and vomiting were troublesome in five. Hemorrhage occurred in 22 patients, distension was marked in 23, and in two cases perforation occurred, both fatal. The spleen was palpable in 69 per cent. of the cases noted; true catarrhal jaundice was present in one case. Two showed epistaxis, three pleurisy, and seven bronchitis. The ear was most often affected by the special-sense organs. Retention of the urine occurred in six cases, acute nephritis in two. Cystitis was seen three times, hematuria twice. Two patients showed acute mastitis. One pregnant patient went to term normally during the disease and was delivered without event. Necrosis of the nasal septum was seen once. The Widal reaction was positive in 93 per cent. of the cases noted. The mortality of the series was 12 per cent. The features exhibited by the cases were the frequency of atypical typhoid state, the notable implication of the central nervous system, and the inefficiency of the sponging as compared with treatment by tubs.

Painful Heels.—Dr. Baer reported five cases of this condition. The first was a man of 18 who had had gonorrheal urethritis three months previously and whose discharge was still present on admission. Both heels were extremely painful, no flatfoot was present, and the radiograph showed exostoses beneath the os calcis on both sides. They were both removed by operation, and cure was complete. The second patient complained of pain in heels and ankles. There was history of an attack of gonorrhea nine months previously. The os calcis was found thickened, but the patient refused operation. In the third case there was pain in the heels and back. The patient had had three attacks of gonorrhea. There was a spot of extreme pain and tenderness at the attachment of the plantar fascia. These exostoses were removed by operation, and though cultures were negative, the sections showed diplococci, which decolorized by Gram. The fourth patient denied gonorrhea, but had an inguinal bubo. Pain in the heels had been present for several months. There was tenderness on pressure over the heel and on stretching the plantar fascia. The radiograph showed exostoses. These were removed and a pure culture of the gonococcus grown from them. In the fifth patient exostoses were removed, but were sterile on culture. Operation, however, gave complete relief.

The primary seat of the deposit in these cases seemed to be in the plantar fascia, from which there was a down growth into the peritoneum. The exostosis was always situated at the attachment of the plantar fascia, but in some of the cases there was also thickening of the sides of the os calcis. Motions were not limited, but there was a characteristic gait, the heels being used little or not at all. When the spine was affected the symptoms were those of an osteoarthritis. In the two cases in this series in which the spine was affected as well as the heels gonococci were found in the growths removed from the heels.

Atheromatous Cyst of the Scrotum.—This case was reported by Dr. Churchman. The patient was a colored man, aged 41. The tumor had been present since early boyhood. It lay in the raphe of the scrotum, was freely movable under the skin, and was a little larger than the testicles, though resembling them in shape. It had no definite pedicle. There were no symptoms accompanying it. The tumor was removed under cocaine, and

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proved on section to be an epithelial-lined cyst containing cholesterin crystals and epithelial cells, but no true dermoid elements.

Bladder Calculus in an Infant.—The patient, reported by Dr. Churchman, was a male 19 months of age. He was healthy and sturdy, but had had for four months hematuria with straining pain at stool and on micturition. By means of a small searcher a stone was located in the bladder. The patient had not yet been operated upon. No case of stone in the bladder in so young a patient had occurred in the 80 cases seen at the Johns Hopkins Hospital.

Congenital Urethral Stricture.—This patient was a boy, aged 13, who had come to the clinic complaining of hematuria and pain over the ureter, with nausea and vomiting. Previous genitourinary trouble were denied. An *x*-ray picture and examination of the urine for tubercle bacilli were negative. Examination of the urethra showed a pinpoint meatus and two narrowings—one in the bulbomembranous portion and one just back of the meatus. Under gradual dilation all symptoms disappeared and the urine became absolutely clear.

Traumatic Atrophy of the Testicle.—The patient was a man aged 19 who had been normal in every way until 11 months before admission, when he had received a kick in the scrotum, followed by redness and swelling of the left testicle. The swelling soon went down and atrophy then supervened, the testicle gradually shrinking until it reached the size of a hazelnut. It, with an accompanying variocele, was removed under cocaine. Section of the testicle showed a good many normal tubules and a few atrophic ones. There was no connective-tissue increase. The vas and epididymis were potent, and no good pathological explanation was found for the atrophy. The specimen also contained a curious glandlike structure which looked on cross-section much like the uterus. It was connected with the tunica albuginiea by a tube lined by columnar ciliated epithelium which looked a good deal like the Fallopian tube. The structures were thought to be rests of the Mullerian duct.

Book Reviews.

SURGICAL TREATMENT OF BRIGHT'S DISEASE. By George M. Edebohls, A.M., M.D., LL.D. New York: Frank F. Lisiecke. 1904.

In this volume Edebohls has gathered together all the papers by him on this subject which have appeared in the various medical journals and which have created so much discussion both in this country and abroad, to which has been added a large amount of new material drawn largely from his own experience. He gives the complete histories of 72 of his patients operated upon for chronic Bright's disease up to the end of the year 1903. As regards the nature of the operation performed, decapsulation of both kidneys was performed in 48 cases, decapsulation and fixation of both kidneys in 16 cases, decapsulation of both kidneys and fixation of right kidney in two cases, decapsulation of one kidney and removal of the other in two cases, and decapsulation and fixation of right kidney in four cases. The results of these operations as far as could be determined were as follows: In seven

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cases death occurred within two weeks of operation, in 13 cases death occurred from nephritis subsequent to this period, in nine cases death occurred from other causes; three cases were unimproved, 20 were improved and 17 were cured. As Edebohls himself says, the surgical treatment of chronic Bright's is on trial and will be judged by its results, and to come to a definite conclusion regarding this procedure years of observation are necessary. The book is extremely interesting and very suggestive, although a much greater length of time and a much greater number of cases will be necessary to establish this method as the correct mode of treatment of chronic nephritis. B.

A Textbook of Physiological Chemistry. By Charles E. Simon, M.D. Second edition. Philadelphia and New York: Lea Bros. & Co. 1904.

This work of Simon's should prove of great value both to the general practitioner and to the medical student. The whole subject of physiological chemistry is treated in a very satisfactory manner, and all the recent work on this subject, notably Emil Fischer's work on the proteids, has been incorporated. As far as possible the chemistry of the various processes has been gone into in detail, and this is especially so in the cases of the nitrogenous derivatives of the albumins, which, as all know, have helped us so much in reaching a proper conception of the proteid molecule. The work is divided into three main divisions: in the first, the origin and chemical nature of the three great classes of foodstuffs is considered, as well as the most important products of their decomposition; in the second edition, digestion, resorption and excretion are considered at length, while in the third division of the work the chemical study of the organs and tissues of the body is considered in a very satisfactory manner.

The book is complete, compact and well written and can be thoroughly recommended. B.

Manual of Serum Diagnosis. By Dr. O. Rostoski. Authorized translation by Dr. Charles Boldûan. First edition. New York: John Wiley & Sons; London: Chapman & Hall. 1904.

This little work is one of a series of very interesting works translated from the German by Dr. Charles Bolduan. In it we find a most satisfactory *résumé* of the subject of serum diagnosis, much more attention being paid to the practical than to the theoretical side of the subject. After a general consideration of the subject Rostoski takes up in order serum diagnosis in typhoid and paratyphoid fevers, in tuberculosis, in plague, in cholera, dysentery and glanders, and infections with the pneumococcus, meningococcus, streptococcus and staphylococcus. At the end of the book a few pages are devoted to a discussion of the forensic blood test, Deutsch's haemolytic blood test, Kraus' phenomenon and Wilson's study on the Gruber-Widal reaction.

This book is a thoroughly satisfactory, although brief, *résumé* of the subject of serum diagnosis, and the few hours necessary for its perusal would be time well spent by any student of medicine. B.

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MARYLAND MEDICAL JOURNAL.

JOHN S. FULTON, M.D., *Editor.*

Associate Editors:

THOMAS R. BROWN, M.D. | HUGH H. YOUNG, M.D.
ROBERT REULING, M.D. | JOSE L. HIRSH, M.D.

BALTIMORE, AUGUST, 1905

THE DECLINE OF MALARIA IN MARYLAND.

DR. WATSON presents in his interesting paper very strong evidence of a remarkable subsidence of malaria in Maryland, but he wisely reminds us that the history of the disease here and elsewhere is marked by periods of decline amounting almost to extinction, followed often by recrudescence in epidemic proportions. Dr. Watson gives little credit to any of the agencies commonly mentioned in explanation of the present decline of malaria—improved land drainage, the use of quinine, and the increased use of mosquito screens. Admitting that these agencies may have played a part, he believes that malaria has subsided in obedience to some unknown natural force which will not suffice for the extinction of the disease, and may allow its reappearance in an area as wide as ever.

Whether human activities have prevailed thus far against malaria or not, there is no doubt whatever that drainage, quinine, and the use of screens can extinguish malaria without other aids of any sort. It seems doubtful if Dr. Watson has given credit to these human agencies, admitting, as he does, their potency. To one who has witnessed the very striking repression of malaria in the past 25 years, some concurrent events are very impressive. Twenty-five years ago a rural practitioner in the tidewater counties expected the crop of ague to begin in July and to last until December. In many localities the people anticipated the season's chills by the purchase of nostrums. A good many people believed malaria to be incurable. They had good reason. Quinine was very expensive. Sulphate of cinchonidia, very much cheaper than quinine, came on the market in the early eighties. It was not more heartily welcomed by the physicians than by the country storekeeper. This useful salt displaced many patent medicines and repaired the damaged reputation of quinine. Then the tax was removed from the cinchona salts, and the sales again increased. A physician in good practice might use 120 ounces of quinine and cinchonidia in a season, but the crossroads merchant sold four, five or six times as much in one-eighth-ounce and one-quarter-ounce packages. It was used not only as a curative, but also as a prophylactic. An eighth-ounce of quinine in a quart of whiskey

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made what the people called a tonic, and a tablespoonful three times a day was the dose.

Meanwhile the art of home-building was very much simplified. Sash and door factories made it more economical to build a house to fit ready-made windows and doors than to build windows and doors to fit a house. In the course of years every man's windows and doors were like every other man's windows and doors. The cotton mosquito netting was sold in less and less quantities. Wooden screens with wire netting were sold at less and less prices and in increasing number at the country stores. During the same period the woods were falling and the clearing of timber land deprived the mosquitoes of needed shelter. It does not seem necessary to invoke the preponderating influence of an inscrutable natural agency in explanation of the steady recession of malaria during this period.

Malaria has not disappeared. Its limits have been more and more circumscribed, but malarial foci still exist, certainly in Dorchester, Wicomico, Somerset, and Worcester counties. In other counties also, if looked for, such foci can certainly be found. These areas have fairly definite characteristics. They are very small in extent and very unfavorable as to soil conditions. They include forest lands, which are too remote from railways and navigable waters to be profitably cut. They are inhabited by very poor people, many of whom do not believe that malaria is curable, and do not trouble themselves or the medical profession very much during the ague season. In these areas, which probably exist in 10 counties of Maryland, malaria maintains strongholds from which it may at any time issue to make extensive depredations on people who think that malaria has finally and permanently retired.

OTHER FEVERS.

THE very extensive use of quinine which grew up in medical and domestic practice during this time still persists. As Dr. Osler used to say, great quantities of quinine are wasted in the treatment of diseases which are in no way benefited by that drug. The notion that malaria complicates more or less every disease occurring in certain districts still has considerable grip on the popular mind, and has by no means disappeared from professional opinion. The typho-malarial delusion which prevailed very widely 20 years ago, though subsiding, has not disappeared. The majority of rural practitioners still prescribe quinine in fever cases, which they fully recognize as typhoid, and use it freely in all the cases which they describe as "malarial," "remittent," or "bilious" fevers. It would be of interest to know whether aestivo-autumnal malarial fever is anything like so prevalent as the common diagnosis of "remittent" fever and "typho-malarial" fever would seem to indicate. Wherever laboratory methods are habitually made use of in the diagnosis of these fevers the "bilious," "remittent," "nervous," "catarrhal," "slow," "continued," and "typho-malarial" fevers have been found to be true typhoid.

Nearly all of these obscure fevers are either typhoid or aestivo-autumnal malarial infections, and it is of equal interest and importance to determine

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the true prevalence of each of these diseases. One notes that two prominent practitioners in St. Mary's county report to Dr. Watson that they see each year a good many cases of remittent fever. Similar cases in the practice of other physicians in the same locality are considered to be typhoid. A judgment on this difference of opinion can be and should be rendered by the use of laboratory methods. It is noteworthy that the physicians of St. Mary's county make very little use of the facilities offered by the State laboratory in the diagnosis of these fevers. It may indeed be difficult to clear up these differences of opinion by the study of specimens of blood sent to Baltimore from such a distance, but if a good laboratory man could visit this county and study the cases giving rise to these differences of opinion a definite solution might easily be reached.

A year or two ago the Delaware State Board of Health sent its bacteriologist out to study in the field just this problem. In a year's work no cases of continued malarial fever were discovered, and practically all of those which were supposed to be continued malarial fevers were found to be typhoid. It does not follow that the same conclusion would be reached in St. Mary's county. In this connection it is interesting to note that the Georgia State Board of Health has found a very considerable number of cases of continued fever, presenting typhoid symptoms, which do not give the Widal reaction with stock cultures of typhoid bacillus, and which are certainly not malarial cases. It is possible that some of the less usual paratyphoid and paracolon infections are somewhat common in Georgia, and may not be rare in Maryland. In Baltimore such infections are extremely rare, but if they exist in St. Mary's county or elsewhere the fact should be determined. Dr. Watson calls attention to the fact that some physicians in Baltimore still see every year what they believe to be continued malarial fever, and he rightly says that in this view they are in conflict with the experience of all physicians who habitually use the laboratory aids in diagnosis. It seems probable that the professional default in the diagnosis of typhoid fever is as small in Maryland as in any of the United States, and certainly smaller than in any of the Southern States. The delusion concerning a continued malarial fever prevails throughout the United States, and occurs even in areas where malaria is wholly absent. In Maryland there is little excuse for the survival of this error, if it be an error, for laboratory aids to diagnosis are within the reach of every physician in the State.

The sanitary interests of the State demand that this doubt shall be removed. Malarial and typhoid fevers are both preventable, provided their existence, their location, and the local causes which favor their propagation are recognized. The popular mind is pretty well awakened on the subject of typhoid fever. It is of general interest, for the disease has no preferred habitat within the State. The prevention of malaria does not exercise the popular mind in Maryland, because it is at present confined to a few small and remote sections of the State. Malarial fever is so nearly exterminated that the present situation offers a splendid opportunity to make its extermination complete. Enough quinine is wasted in Maryland every year to make the State absolutely malaria-proof for a season, provided the drug could be conveyed into the right insides.

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Medical Items.

THE next meeting-place of the American Medical Association will be Boston. The newly-elected president is Dr. Wm. J. Mayo of Rochester, Minn.

DR. WM. A. MOALE died at Johns Hopkins Hospital on July 12. Dr. Moale graduated at the University of Maryland in 1879, but practiced medicine for but a short time.

DR. A. PALMER DUDLEY, the distinguished gynecologist, died on July 15 at Liverpool while on his way to attend the International Congress on Gynecology at St. Petersburg.

DR. HARRY FRIEDENWALD was recently elected president of the American Federation of Zionists, and is now attending the Seventh Congress of Zionists at Basle, Switzerland.

AMONG Baltimoreans now in Europe are Dr. Wm. H. Welch, Dr. Howard A. Kelly, Dr. Thomas A. Brown, Dr. Ridgely B. Warfield, Dr. Christian Deetjen, Dr. T. Caspar Gilchrist, Dr. Harry Friedenwald, Dr. Henry F. Reid.

THE new health commissioner of Pennsylvania has the appointment of 10 district health officers for the State. These positions pay $2500 a year each. There are 1000 applicants for these 10 positions.

HEALTH COMMISSIONER DARLINGTON of New York city has made an urgent recommendation that the water supply be filtered. The estimated cost of a municipal filtration plant near Tarrytown is said to be $10,000.

AS A sample of overcrowding in public institutions the Morristown (Pa.) Hospital for the Insane will do. There are 2427 patients, of whom more than 400 are sleeping on cots in the corridors for want of dormitory space.

THE students and faculty of medicine of George Washington University have erected a handsome bronze tablet to the memory of Dr. E. A. de Schweinitz, who died in February, 1904.

THE sanitary conditions in Venezuela are alarming. A very long drought, nearly three years, has dried up all the wells about Maracaibo. The people are obliged to use the water of a highly-polluted lake. Yellow fever is very prevalent.

DR. MICHAEL K. WARNER died at his home, 801 North Stricker street, on Saturday, July 22, of cancer. A short time before he died Dr. Warner destroyed his account books, giving as his reason that he did not want his patients pressed for payment after he was dead.

A WRECK occurred to the Great Northern flyer at Willston, N. D., on July 6. Seven cars were burned and 30 persons injured. Drs. Frank Billings, Arthur Dean Bevan, W. A. Pusey, L. L. McArthur of Chicago, and Dr. Meecher of Portage, Wis., were in a private car bound for Portland. They escaped unhurt.

THE Board of Health of New York city has received an appropriation of $250,000 for a City Consumption Hospital. On the property purchased near Mount Hope in Orange county 400 patients can be accommodated in existing buildings, and it is proposed to proceed at once in the care of consumptives, without waiting for the large hospital which is to be built.

PHILADELPHIA is to have a house-to-house inspection by the health department. The inspector is to look especially after the health of infants. When parents are too poor to provide medicines and medical attendance for sick babies these are to be supplied by the city. Advice is to be given about the feeding of infants during the hot weather.

THE DR. WELDEN who created a great sensation two years ago by advertising for a healthy person who would sell an ear to be grafted on one of Dr. Welden's patients, was recently arrested in New York on a charge of obtaining money under false pretenses. He is a "beauty doctor," and some of the women whom he failed to beautify want their money back.

THE plague mortality in India is now rapidly declining to the great relief of the civilized world. The plague mortality since 1900 has risen about as follows: In 1900, 90,000; in 1901, 282,000; in 1902, 574,000; in 1903, 852,000; in 1904, 1,040,000. The mortality for the first six months of 1905 promised a year's mortality equal to, if not surpassing, that of 1904. In Japan the disease is causing much concern. There have been several deaths from plague in Tokyo. Meanwhile St. Petersburg is exercised about cholera.

DR. JOHN H. PRYOR, one of the most indefatigable workers in the campaign against tuberculosis, has resigned the superintendency of the New York State Hospital for Incipient Tuberculosis. His reason for retiring is that his efforts were so hampered by red tape that he found it impossible to administer the affairs of the hospital to his own satisfaction. He says: "Too many shackles, too much red tape, too many bosses, and too much humbug in the ad-

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ministration of civil-service affairs in New York State."

PROF. HERMANN NOTHNAGEL of Vienna died on July 6 of angina pectoris. He was 64 years old, having been born in 1841. Professor Nothnagel was one of the group of great men who gave the Vienna School of Medicine world-wide fame. About two hours before his death he wrote a letter to his clinical assistant giving exact notes concerning the course of his illness. It is said that he fully understood the significance of his arteriosclerosis, and had made notes of the prodromal symptoms of two or three attacks of coma.

THE midsummer meeting of the Allegany County Medical Society was held in Cumberland on July 11, Dr. J. J. Wilson, the president, in the chair. Drs. Charlotte B. Gardner, Wm. R. Foard, W. R. Hodges, and Charles L. Owens were elected to membership. Dr. Samuel T. Earle, president of the Medical and Chirurgical Faculty, was present and made a forcible address. Papers were read by Drs. E. H. White and James T. Johnson. The announcement that the semiannual meeting of the Faculty is to be held at Deer Park in September was received with great pleasure.

HEALTH conditions are to receive first consideration at Panama from now until the canal zone has been made habitable. The engineers are to let the ditch alone until sanitary work is completed. Chairman Shonts says: "Our first duty is to create sound underlying conditions. This is vastly more important than the removal of earth. The men must have suitable houses in healthful surroundings; they must have wholesome food at reasonable cost; they must have suitable facilities for transportation to and from their work, and they must have opportunity for recreation. It will be the policy of the commission to provide these essentials as quickly as possible."

THE new health commissioner of Chicago, Dr. Whalen, explains the fact (if it is a fact) that Chicago ranks third among large cities in the matter of smallpox by saying that in Chicago the cases are all examined by experts, and if they are smallpox, are reported as smallpox, and not as "chicken-pox" or "Cuban itch." This is apparently aimed at New York, which ranks next above Chicago, or second among American cities. Dr. Whalen does not name the city which has done better than New York. Perhaps it is Baltimore, where there has been no case of smallpox in more than a year, and where the chicken-pox and Cuban-itch delusion has not appeared at any time in the past 20 years. If Chicago information is correct as far as it goes, the order of the three cities most fortunate in the matter of smallpox mortality is as follows: Baltimore, 0; New York, 8; Chicago, 52.

REPORTING on the library of the University of Maryland School of Medicine, Dr. Cordell, the librarian, says: "The phenomenal growth of this valuable collection, which had its origin in the library of Dr. John Crawford in 1813, and is therefore probably the oldest medical-school library in America, is gratifying to all the alumni of the old Maryland University. Since July, 1903, about 1600 volumes have been added, so that now there are 5200 volumes and 4000 pamphlets, and 53 journals are regularly received. There has been great improvement in the rooms since they were confined strictly to library purposes. One can always find quiet, comfortable chairs and tables, writing materials, and all possible helps in research. During the winter the hours were from 9 A. M. to 5 P. M.; during the summer the hours are from 12 to 2. The report just presented to the faculty of physic shows that the interest has been well sustained. During the year 700 books, 400 pamphlets, and 12 pictures were added. The largest gift was the collection of the late Dr. Alfred H. Powell, coming from his widow, and consisting of 217 volumes, a large lot of surgical instruments, and shelving. Next in value were gifts of Dr. N. R. Gorter, Dr. F. M. Chisolm, and the library of the Medical and Chirurgical Faculty. A rare addition was made by Dr. Chisolm, who gave a copy of Harvey on "Generation," London, 1653; also an old edition of Celsus. Dr. Chew gave the first issue of the Index Catalogue of Surgeon-General's Library, 16 volumes, completing this great work. Other donors were Drs. Caspari, Hemmeter, Cordell, Winslow, Mitchell, Ashby, Coale, Councilman, Osler, Richardson, Edebohls, Mr. Kosminski, Mr. N. C. Killan, the Misses Davis, and the governments of the United States, Cuba, and Porto Rico. There are 86 registered members, and besides borrowed books many hundreds were consulted. Active membership may be secured by any physician, whether an alumnus of the University or not, by paying $2 annually. The honorary membership fee is $5. This library needs endowment and pecuniary support, money for current expenses, and for the purchase of books and journals. The receipts during the year were $61.10."

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A REVIEW OF 3676 DEATHS DUE TO CANCER IN BALTIMORE CITY FROM 1891-1904, INCLUSIVE.

By C. Hampson Jones, M.D.,

Assistant Commissioner of Health, Baltimore.

READ BEFORE THE MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND, APRIL 27, 1905.

THIS summary of the deaths due to cancer during the past 14 years is preliminary to a report which we hope to produce, *i. e.*, a determination of the increase, if any, of cancer in Baltimore. The detail work that will be required in such an effort will be possible only after a careful census of the citizens is taken by the police department, which we hope will be done in the first two months of 1906.

According to the United States census of 1890 our city contained 434,439 people; in 1891, by adding 7452 as an average increase, we had 441,889, and in 1900 508,957 people. According to the population in 1891 we had one death due to cancer in 1972 citizens, while in 1900 we had one death in 2011, which indicates a decrease.

It will be better, perhaps, if we make a comparison of all the years of the decade, adding 7452 to the population of the previous year until 1901, and then take the estimated population for each year in round numbers, thus:

	Population.	No. of deaths.	Rate per persons living.
1891	441,889	224	1 in 1972
1892	449,341	183	1 in 2445
1893	456,793	207	1 in 2206
1894	464,245	196	1 in 2368
1895	471,697	246	1 in 1917
1896	479,149	276	1 in 1736
1897	486,601	259	1 in 1878
1898	494,053	256	1 in 1933
1899	501,505	280	1 in 1798
1900	508,957	253	1 in 2011
1901	518,000	299	1 in 1732
1902	525,000	311	1 in 1366
1903	533,000	311	1 in 1713
1904	541,000	375	1 in 1442

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If we divide this table into three sections of five, five, and four years, respectively, we have the following:

	Total population.	Total deaths.	Rate per persons living.
1891-1895.....	2,283,965	1056	1 in 2162
1896-1900.....	2,470,265	1324	1 in 1865
1901-1904.....	2,117,000	1296	1 in 1634

This last table indicates an increase in the number of deaths due to cancer, but as I have not the actual number of people living at the cancer age, the actual increase, if any, cannot be determined now. This increase, if any, seems to be principally in cancer of the stomach and liver, as shown in Table No. 6.

The first	five	years	give	302	deaths.	Cancer of Stomach.
" second	"	"	"	364	"	
" last four	"	"	"	363	"	

The second five years show an increase of 62 deaths over the first five years, and the last *four* years show within one death of the number for the previous *five* years.

The first	five	years	give	90	deaths.	Cancer of Liver.
" second	"	"	"	144	"	
" last four	"	"	"	162	"	

Or the last *four* years show an increase of 22 deaths over the previous *five* years, and they, in turn, an increase of 54 deaths over the first five years. Now, this increase may be due to one of three things:

First, an actual increase of primary invasions of the stomach or liver.

Second, to secondary invasion of these organs after operation on breast or uterus.

Third, greater care and knowledge of the physicians, producing more accurate diagnoses.

Yet when we examine the list of deaths due to cancer of breast and uterus we find that there is also an apparent increase, in spite of the fact that many cases of cancer of the breast or uterus are successfully and permanently removed.

The first	five	years	give	152	deaths.	Cancer of Breast.
" second	"	"	"	148	"	
" last four	"	"	"	156	"	

Or, with the average number of deaths added for 1905, we will have an increase of 47 deaths over the second five years.

Cancer of the uterus, however, does not show so great an increase.

The first	five	years	give	204	deaths.	Cancer of Uterus.
" second	"	"	"	258	"	
" last four	"	"	"	218	"	

This shows (when we add the average increase for 1905) 272 deaths—an increase of 14 deaths for the third five years.

It is interesting to note the disproportion of the whites and

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negroes affected by this disease, the negroes apparently being less susceptible. As I do not know the number of negroes living between 20 and 70 years of age, and also the average age of the negro at death, I can only draw attention to the fact that while there are 86,000 negroes and 464,000 white people in Baltimore, or a little more than one-sixth of the entire population, yet they show about one-ninth of all the deaths due to cancer. While it is an acceptable explanation of this difference in the two races to say that perhaps the negro does not average as high in the cancer age as the white people, yet it is certainly true, as shown in Table No. 2, that average age at death (due to cancer) of the negro is much less than that of the white people—49.454 years as compared with 57.689 years.

A careful examination of Table No. 3 will demonstrate, I think, the far less frequent occurrence of cancer in the negro of those portions of the body where we usually have epitheliomata.

The distribution of the red dots on the map showing the location of deaths is singularly uniform throughout the entire city. Certain blocks, or, rather, one side of a block of houses, show an unusual number of houses in which death from cancer has occurred, yet so far in the investigation no "cancer houses" have been demonstrated.

TABLE No. 1.

SUMMARY.

	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.
Total deaths	224	183	207	196	246	276	259	256
" whites	200	160	190	174	215	250	229	222
" negroes	24	23	17	22	31	26	30	34
" males	*68	58	73	*43	88	98	88	91
" females	155	125	134	152	158	178	171	165
" married	128	108	105	104	132	151	133	137
" single	21	19	27	17	29	30	31	35
" widows	56	43	52	60	66	68	74	68
" widowers	15	11	20	11	13	21	14	14
" divorced	...	...	...	...	...	...	...	...
" unknown	4	2	3	4	6	6	7	2

	1899.	1900.	1901.	1902.	1903.	1904.	Total.
Total deaths	280	253	299	311	311	375	3676
" whites	245	221	270	275	285	331	3267
" negroes	35	32	29	36	26	44	409
" males	95	69	101	114	†103	127	‡1216
" females	185	184	198	197	206	248	2456
" married	134	141	162	169	176	190	1970
" single	37	32	33	42	39	54	446
" widows	77	64	78	69	79	100	954
" widowers	31	15	25	29	17	28	264
" divorced	...	1	...	...	...	1	2
" unknown	1	...	1	2	...	2	40

*One card missing. †Two cards missing. ‡Four cards missing.

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TABLE No. 2.

Average Age at Death for All Cancers.

Total years, white and colored	208.698
Total deaths, white and colored	3,676
Average age	56.773
Total number of years, white persons only	188,471
Total deaths of whites	3,267
Average age at death, white persons only	57.689
Total number of years, colored persons only	20,227
Total deaths of colored persons only	409
Average age at death	49.454

TABLE No. 3.

Table Showing Number of Deaths From Cancer, According to Organ Involved, From 1891 to 1904, Inclusive (Fourteen Years).

Organs Involved.	Total Deaths. Number.	Total Deaths. White.	Total Deaths. Black.	Sexes. Females.	Sexes. Males.	Total Years. Number.	Total Years. White.	Total Years. Black.
Abdominal (abdomen, retro-peritoneal)	20	18	2	16	4	1,057	991	66
Axilla	7	7	...	5	2	395	395	...
Back	1	1	...	...	1	50	50	...
Bladder	46	42	4	14	32	2,479	2,520	229
Breast	456	378	78	456	...	25,235	21,115	4120
Cerebrum	2	1	1	2	...	47	44	3
Chest (chest, sternum, mediastinum, pleura)	6	6	...	3	3	373	373	...
Colon (colon, cecum, hepatic flex, sigmoid)	39	38	1	14	25	2,235	2,182	53
Esophagus	38	26	2	7	31	2,240	2,149	91
Eyeball	1	1	...	...	1	8	8	...
Extremities (scapula, shoulder, arm, humerus, hand, buttock and hip, thigh, leg, tibia, knee, foot)	23	22	1	10	13	1,213	1,143	70
Face (cheek, nose, eye, ear, lip, mouth, palate, mouth and face)	120	116	4	47	73	7,641	7,423	218
Gall bladder and duct	8	7	1	5	3	433	376	57
Genital organs—female, external (clitoris, genitalia, vulva, vagina)	19	18	1	19	...	1,189	1,150	39
Genital organs—male (penis, scrotum, testicle)	7	6	1	...	7	398	352	46
Glands (lymphatic)	7	7	...	2	5	397	397	...
Head (head, scalp, skull)	10	9	1	7	3	723	112	59
Intestine (duodenum, intestine, bowels)	84	76	8	53	31	4,676	4.338	338
Inguinal region	2	2	...	...	2	82	82	...
Jaw (antrum of Highmore, upper, lower)	26	22	4	9	17	1,527	1,291	236
Kidney	27	27	...	13	14	1,432	1,432	...
Larynx	18	18	...	4	14	1,001	1.001	...
Liver	396	368	28	247	149	23,503	22,046	1547
Lungs	11	11	...	5	6	509	509	...

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TABLE No. 3—*(Continued.)*

Organs Involved.	—Total Deaths.— Number.	White.	Black.	—Sexes.— Females.	Males.	—Total Years.— Number.	White.	Black.
Neck	26	21	5	5	21	1,537	1,326	211
Ovary	30	29	1	30	...	1,332	1,292	40
Pancreas	28	25	3	10	18	1,562	1,417	145
Pelvic (pelvic, broad ligament)	12	11	1	3	9	585	531	54
Perineum	1	...	1	...	1	57	...	57
Peritoneum (peritoneum, mesentery, omentum)	25	21	4	17	8	1,334	1,074	260
Pharynx (pharynx, throat, tonsil)	43	39	4	7	36	2,510	2,292	218
Prostate	6	5	1	...	6	419	370	49
Rectum	118	108	10	63	55	6,744	6,265	479
Salivary glands (parotid, sub-lingual)	2	2	...	1	1	110	110	...
Skin	2	2	...	1	1	71	71	...
Spleen	6	6	...	3	3	357	357	...
Spine	5	5	...	3	2	251	251	...
Stomach	1209	924	105	526	503	62,656	56,701	5955
Tongue	45	43	2	6	39	2,593	2,446	145
Thyroid gland	6	6	...	4	2	357	357	...
Umbilicus	1	1	...	1	...	58	58	...
Uterus	680	584	96	680	...	34,792	30,246	4546
Organ not named	233	196	37	160	73	12,190	11,296	894
Total	*3672							

*Four items missing.

TABLE No. 4.

ALIMENTARY CANAL.

Organ Involved.	—Total Deaths.— Number.	White.	Black.	—Sexes.— Females.	Males.
Mouth	15	14	1	6	9
Tongue	45	43	2	6	39
Palate	1	1	..	..	1
Pharynx	43	39	4	7	36
Esophagus	38	36	2	7	31
Stomach	1029	924	105	526	503
Intestine (small)	84	76	8	53	31
Colon	39	38	1	14	25
Rectum	118	108	10	63	55
Total	1412	1279	133	682	730

TABLE No. 5.

AVERAGE AGE AT DEATH AS PER ORGAN INVOLVED.

Breast.		*Rectum.*	
Total years, white and black.	25,235	Total deaths, white and black	118
Total deaths	456	Total years, white and black.	6,744
Average age at death	55.340	Average age	57.152
Total number of years, white.	21,115	Total deaths, white	108
Total deaths, white	378	Total years, white	6,265
Average age at death	55.865	Average age, white	58.009
Total number of years, black.	4,120	Total deaths, black	10
Total deaths, black	78	Total years, black	479
Average age	52.820	Average age	47.900

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Liver.		*Stomach.*	
Total deaths, white and black	396	Total deaths, white and black	1,029
Total number of years	23,593	Total number of years	62,656
Average age	59.378	Average age	60.890
Total deaths, white	368	Total deaths, white	924
Total number of years	22,046	Total years, white	56,701
Average age	59.907	Average age, white	61.363
Total deaths, black	28	Total deaths, black	105
Total years, black	1,547	Total years, black	5,955
Average age	55.250	Average age, black	56.714

Uterus.

Total deaths, white and black	680
Total number of years	34,792
Average age	51.017
Total deaths, white	584
Total years	30,246
Average age, white	51.791
Total deaths, black	96
Total years, black	4,546
Average age, black	47.354

TABLE No. 6.

THE FIVE PRINCIPAL ORGANS INVOLVED IN EACH OF THE FOURTEEN YEARS.

	1891.	1892.	1893.	1894.	1895.	1896.	1897.
Stomach	51	57	72	53	69	81	56
Liver	18	18	15	17	22	28	30
Uterus	46	36	37	42	43	50	59
Breast	35	28	22	32	35	29	35
Rectum	10	3	7	3	7	9	5

	1898.	1899.	1900.	1901.	1902.	1903.	1904.
Stomach	71	82	74	80	78	98	107
Liver	20	37	29	44	37	32	49
Uterus	41	49	59	49	52	64	53
Breast	29	30	25	41	38	30	47
Rectum	10	10	6	11	10	15	12

TABLE No. 7.

THE NUMBER OF DEATHS OF MALES AND FEMALES ACCORDING TO ORGANS INVOLVED, EXCLUSIVE OF THE GENITALS.

	Males.	Females.
Abdomen	16	4
Axilla	5	2
Back	..	1
Bladder	14	32
Cerebrum	2	..
Chest (chest, mediastinum, pleura)	3	3
Colon (colon, cecum)	14	25
Esophagus	7	31
Extremities (shoulder, humerus, hip, buttock, leg, tibia,		

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TABLE No 7—(*Continued.*)

	Males.	Females.
knee, foot)	10	13
Face (face, cheek, nose, eye, lip, mouth)	47	73
Gall-bladder and duct	5	3
Glands (lymphatic)	2	5
Head	7	3
Intestine	53	31
Jaw	9	17
Kidney	13	14
Larynx	4	14
Liver	247	149
Lungs	53	31
Neck	5	21
Pancreas	10	18
Pelvic	3	9
Perineum	..	1
Peritoneum	17	8
Pharynx	7	36
Rectum	63	55
Salivary glands	1	1
Skin	1	1
Spleen	3	3
Spine	3	2
Stomach	526	503
Tongue	6	39
Thyroid gland	4	2
Umbilicus	1	..
Not named	196	37
Totals	1309	1164

TABLE No. 8.

DEATHS FROM CANCERS, ACCORDING TO OCCUPATION, FOR FOURTEEN YEARS, 1891-1904.

Artisans (49 occupations, each having less than five deaths)	83	Merchants and manufacturers, including bankers	156
Attorneys and brokers	12	Musicians	5
Bakers	8	Nurses	19
Barbers	10	Painters	14
Blacksmiths	11	Peddlers	6
Butchers	17	Physicians	7
Builders and contractors	16	Plasterers	9
Carpenters	36	Police and watchmen	15
Cabinetmakers	9	Porters	9
Clergy	10	Printers and engravers	8
Clerks	61	Recluse	8
Cigarmakers	14	Saloon and restaurant keepers	18
Coopers	6	Sailors	19
Dairymen	5	Seamstresses and milliners	55
Engineers	9	Servants	126
Farmers	24	Shoemakers	46
Gardeners	14	Steam railroad employes	13
Housewives	879	Tailors	67
Laborers	216	Teachers	15
Laundresses	39	Miscellaneous, each having less than five deaths	73
Machinists and boilermakers	25	No occupation	1474
Molders	10		

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THE DEBT THIS GENERATION OWES TO SURGERY.

By Robert W. Johnson, A.B., M.D.,

Professor Principles and Practice of Surgery, Baltimore Medical College.

READ BEFORE THE MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND, APRIL 26, 1905.

WHEN a man is called to describe the charms of his sweetheart before a mixed company, some of whom know her well and others need enlightenment, he is either coy and silent or becomes enthusiastic, not to say maudlin. Since, through the kindness of your committee, I have been asked and have assumed the responsibility of speaking on the surgery of this generation, I must avoid the horns of the dilemma and speak circumspectly, not as fools, gladly, but as wise, redeeming the time. To acquit myself of arrogance at the outset, let me state at once that surgeons do not claim to be the only living life-savers. All learning is for our good, whether it result in practical, positive acquisition or the often equally beneficial negative of avoidance. The hand that rocks the cradle, that later wields the slipper or the birch, shapes our minds (as well as portions of our anatomy) toward judgment, equity and truth, and makes men of us, capable of discerning and applying theories and facts for individual and public good. So I claim that the mother of a Morton, the little minister of a Lister, the gymnasium teacher of a Koch contributed in no small way to the sum of human happiness and relief, while scattered over the broad earth there are thousands who directly or indirectly have added their mite to the dower that Westinghouse or Morse or Guttenburg, life-savers in other fields than ours, have brought to the animal and human race. The very arch-enemy of life, the soldier, too, contributes, knowingly or unknowingly, his pittance toward life-saving. The modern bullet is more merciful than its ancestor. It is intended to stop, not kill, and though this contention may seem answered by the rotting plains round Mukden, who can say but that from such top-dressing a race of Russians may arise worthy of freedom and its privileges, or that the Japanese Sun will not let in the light of Asia, that will more than pay for this tremendous sacrifice. Having shown you that we are not the only claimants to philanthropy, let us now look at surgery, which, with medicine, does claim to make life-saving and relief its chief end and object. You may laugh in your sleeve at this when you hear, or personally know, of the extortionate fees sometimes charged, and think of it as a gilt-edged philanthropy. You may recall that the sign of the *Medici,* three balls or pills, is now the sign of the pawnshop, one of the sequelae of appendicitis, but it is nevertheless true that one of the greatest rewards and inducements of our profession is that we can make

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our living by saving lives and relieving pain, which, to my mind, is more of a vocation than cornering wheat or lard or advancing a cent on oil, though these occupations may be essential, too.

I will not drag your tired minds through all the halting steps of surgery from Homer to Hippocrates, nor from Galen to the Hunters, an era when our science rose and fell like the ceaseless tides—one day its home among the temples with priestly devotees of Aesculapius, again sinking to a trade relegated to barbers and their ignorant apprentices. The very pole you see so often before the doors of "tonsorial parlors" is not an emblem of patriotism in its red, white, and blue stripes, but the sign of the cuppers and leechers, who used colored ribbons to wind around the arm of the sufferer whose blood was to flow until he fainted to satisfy the charlatan, who would thus free the system of the pernicious humor supposed to reside in what we know to be a life-giving stream. I will not fret your imagination by asking you to look on Marathon or Waterloo, nor attempt to paint the tortures of hot iron and boiling oil before the days when Paré (1564) insisted on the ligature, and thus immortalized his name, barber surgeon as he was, and one who believed in the oil of poppies as specific in gunshot wounds. Think of the strife between these ignorant philanthropists and their equally ignorant but more cruel competitors, the executioners. These latter men were supposed to have special dealings with the powers of evil, and in consequence to have special knowledge of the means of curing diseases considered to be due to witchcraft. A part of their business was to dislocate joints by the rack or to break bones upon the wheel, and hence it was supposed they had special skill in the repair of fractures and of dislocations. A Daniel come to judgment in the person of Frederick the Great of Prussia, as late as 1744, gave out this edict: "If the surgeons are ignoramuses, the public must not suffer, but must submit to be treated by the executioner rather than to remain lame and crippled" (Dennis' "System of Surgery," Vol. I, p. 77).

Let us not hark back, however, to those dark ages for contrasts. Surgery probably was on a par with the other sciences of that time when superstition and ignorance held sway in the human mind and men uninfluenced by Bacon's reasoning chose the *a priori* method of translating facts by theories and strained the facts rather than the theories to make both ends meet. Let us rather take a time which some of us can remember, a date that a father of 70 years may recall, just dimly perhaps, but a part of the generation now with us, and consequently cognate to my subject, say 1840, and let us see what was the condition of surgery at that time, and contrast it with that of 1905.

Take Colles' "Lectures on Surgery," published in 1845, and written by a man whose 35 years of professorship of surgery in Dublin gives him a fair title to be a typical surgeon of that date even if he had not immortalized his name with the most frequent fracture with which we have to deal. What do we find in his work? I am almost tempted to say about the same status as Mar-

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coni would find on the electrical information of the same date, except as to the mechanical or handiwork element of the craft. Thirty centuries look down on us here as they did on Napoleon, and yet the most striking features in the landscape are the pyramids, full of dead bones, and the ever-silent Sphinx. While wondering at the courage of our forbears, both to operate and suffer operations, and appreciating what effort and often self-sacrifice each little advance cost its author in ridicule and threats, yet we can truly say that surgery as we know it today was not yet born, but laboring to that end. The heroic McDowell had operated on the gallant Mrs. Crawford in 1809 in the face of a howling mob that threatened to lynch him if he failed, but, as a rule, the cavities of the body were still sealed to the scalpel, and opening them was like opening the box of precious ointment when the verdict was, "She hath done it for my burial." Take gunshot wounds of the abdomen, and what was the accepted treatment? "Bleed, bleed, bleed" is all you can do for him (Colles, p. 128). Reduce, reduce, reduce a man on the verge of collapse. Verily, except for its grim effect, a *reductio ad absurdum.* What had the writhing patient, then, to mitigate the terror of apprehension or the anguish of fulfillment? Opium. Thank God for that little. The lancet until a faint for a few short moments brought unconsciousness; emetics, tobacco, to relax like the first cigar, and many of you know how preferable death is to that aftermath, and then brute force, not cruelly, but cruel to hold down the shrieking child or best beloved, while the surgeon nerves himself for his ordeal, deaf to entreaties, curses, groans and prayers, does his well-intentioned work with celerity, if not care, and speed is more desirable than accuracy. Should the victim escape alive from the operating-room, new and ever-present dangers awaited him in the ward. So rife were erysipelas, hospital gangrene, blood poisoning, tetanus, and the other powers of the air that many hospitals had to close their wards to prevent a total loss of surgical or obstetrical patients. Nor was this confined to hospital practice. Time after time men would lay down their private practice and leave the neighborhood to stop the train of desolation that followed in their wake. Mother after mother died from fever, and the doctor, in despair, thought himself responsible, and yet he knew no cause for it.. These, too, were met by the lancet, salivation, and depletion until life left *per vias naturales.* But why dwell on the nightmare of science and lore doing their best under ignorance to lighten the darkness before the dawn, for "Now the day spring from on high *is* visiting us, and those that sat in darkness and the shadow of death, to them a light has sprung up." Nothing in all the domain of knowledge, nothing in all the workings of the human mind, no Homer, no Shakespeare, Milton, no man has done so much. The greatest God-given boon ever vouchsafed to humanity, without a rival except the Christ in His sermon on the mount, where love of man, the mainspring of all our work, was instilled in the human heart and philanthropy

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taught the fatherhood of God and the brotherhood of man, can excel the firstborn of modern surgery—anesthesia.

Sancho Panza says, "Blessed is the man that first invented sleep." It is no quixotic tribute to say that Long of Georgia in 1842 and Morton and Warren of New England in 1846 should be canonized, or that Simpson of Edinboro should have a halo round his memory. All honor, too, to that great Queen Victoria, who braved the actual dangers of chloroform as well as the threatened blight of narrow churchmen, shaking off the shackle of the curse of Eden and telling women everywhere that the edict "In sorrow shalt thou bring forth children," had been supplanted by the modern kindly-spoken order, "Breathe it in quietly."

Following soon after the discovery of anesthetics came another advance which, though apparently trifling and simple, had a great influence on wound treatment and its results. I refer to the introduction of the drainage tube by Chassaignac. This drainage tube was to the surgery of that date as important as asepsis is to ours, and even now in suppurating wounds that reach us after infection it is very essential. Esmarch's bandage, next to the ligature, has done more to check the flood of blood from wounds than any other invention, so that now hip-joint amputations cause no more hemorrhage than an ordinary nosebleed, and this generation is making up, by securing vessels before they are cut, for the bloodshed caused and advocated by our surgical and medical ancestors. In the latter part of the sixties twin stars appeared in the surgical horizon, hardly recognized at first, nebular in fact, but destined by their development to produce a tide, not twice a day, but perpetually, of advance and blessing—Pasteur and Lister, the French laboratorian and the Scotch clinician. Who has looked upon their faces and not been impressed with the intense zeal for honest inquiry and determination to find the truth shining out in the earnest, penetrating eye of the French chemist, and who has looked on Lister and spoken with him but feels intuitively, here is a most benignant man? A new science has sprung from their brains, not like Minerva, full-armed from Jove's, but step by step, line upon line, here a little and there a little, until modern surgery now stands refulgent before the world. Yet this was not all plain sailing. Ignorance, jealousy, ridicule had to be met and overcome. Twenty-five years ago Morrell McKenzie told me in London that Mr. Lister's plate on his front door had vitiated the price of property in the neighborhood. It is the old cry, "Away with Him," the benefactor; "Give us Barrabas," the robber. There is no way to estimate the value of antiseptic surgery. Ghosts that walked the wards have been laid in the banishment of sepsis, tetanus, secondary hemorrhage, erysipelas, puerperal fever, etc. The exploring scalpel now throws light on cavities previously open to the homicide alone. Diseases a generation ago guessed at and fatal are recognized and removed without pain or danger of inflammation, without the ever-dreaded daily dressing, without the disgust-

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ing sights and smells of foul wounds—only a line, hardly perceptible, marks the track of the surgeon. Surely antisepsis is a close second to anesthesia. To put this fact in figures, let me quote one item from a small hospital (180 beds) in a Western town where two brothers do the operating. Last year these Mayos operated on the abdomen 1788 times, with the loss of about 3 per cent. of all cases, including cancer. Before Lister and Pasteur they would have done well to cure 3 per cent., with 97 deaths out of every hundred, if they themselves had escaped hanging. The abdomen is not the only cavity open to inspection and treatment through modern surgery. Thanks to the researches of such men as Broca, Goltz, Fritsch, Hitzig, Ferrier, Horsley, Keen, and others, the brain, this *sanctum sanctorum,* has yielded its secrets. We are able to diagnose, and, what is far better, treat with a moderate degree of certainty, abscess, tumor, hemorrhage, pressure, and effusion, not with the witch-hazel wand of the charlatan or the trephine of the Aztec, who made his epileptic patient look like a human pepper pot, but definitely marking out the boundaries of the trouble before the skull is entered, and going down directly over the spot involved. From the little cloud no bigger than a hand we can, like Elijah of old, foretell the storm that is brewing round the capital, and, like Franklin, divert the lightning stroke of death, or, with Röntgen, use that very lightning to discern or dispel the cause. Cocaine, too, belongs to this generation. Time forbids that I should ask you to follow the discoveries in special departments of surgery, each one a volume. How eager to advance, it knows no jealousy, and adopts for its beneficent purposes the laryngoscope of Manual Garcia, the music teacher, with the same avidity as the ophthalmoscope of the surgeon-physicist, Helmholtz, or Sims' speculum, the cornerstone of gynecology. Dr. Holmes tells us how medicine profited from other inventions and discoveries. From a monk it got antimony, from a Jesuit how to cure agues, from a friar how to cut for stone, from a soldier how to treat gout, from a postmaster how to sound the Eustachian tube, from a dairyman how to prevent smallpox, from an old market woman how to catch the itch insect. Nor does it claim from its sister, medicine, more than it is willing to give in return. If we have laid our hand on the appendix, we have given back diphtheria, and nowhere will you find more earnest advocates of serum therapy than surgeons, who are glad to surrender the scalpel to the Pravaz syringe. Last, but not least, you of this generation, who are born free, enjoy not only the results of investigation, but are permitted, if you so desire, to take part in it. Hundreds of great surgical questions still await the spear of Uriel. A thousand rocks on which science splits need but the proper Moses to strike and bring forth the pure water of truth and helpfulness. You, who are not fettered by superstition or trammeled by dogmas of the Middle Ages, rejoice in your freedom! Realize your responsibility! Quit yourselves like men!

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COLLABORATION IN MEDICAL EDUCATION

By Clarence John Blake, M.D.

AN ADDRESS DELIVERED TO THE MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND AT ITS ANNUAL MEETING, BALTIMORE, APRIL 26, 1905.

A REVIEW of the progress of medical education in America shows it to be divisible into three epochs or stages, overlapping each other and more or less coexistant but still sufficiently differentiated to make them enumerable, for purposes of classification, as the individual, the co-operative and the collaborative stages. These met the demands of the time, or of the locality, in which they had their being and each was commensurate with the general educational advancement, except that medicine, emergent from theory into practice and, latterly, with scientific investigation for its foothold, has come to make more rapid progress than any of the other so-called liberal professions.

The early settlers of Jamestown, wiser or more fortunate than their later brethren of Massachusetts Bay, brought with them such accredited persons for ministration to the comfort of the people in sickness as might be needed in the untried experiences of a new country; but the people of the more northern settlement had, none the less, the earnest services of good Deacon Fuller and his kind, who, mixing their medicaments with prayerful thought of the service of God, made such shift as they might against pestilence and disorders, hunger-sickness and the mishaps that came to them out of the encircling wilderness.

Many gentlemen adventurers, yclept physicians and barber surgeons, like gentlemen adventurers in other walks of life, came to the new colonies as time passed on, bided a while and, finding the honey too deep in the cup for their perseverence, flew away again, but the steadier and more sober-minded men of medical attainments remained and, finding fair wage for good labor and chances for neighborly service, cast in their lot with the new people of the New World and became an integral part of the community.

In the beginning, therefore, all medical learning was transported from the old country in the vessels of flesh which contained it, but when the colonies were old enough and compact enough to supply their own needs, young men nurtured, or born and nurtured, in the New World, seeking some more studious means of sustenance than that afforded by husbandry or commerce, turned to medicine as offering both social standing and a desirable occupation and, becoming pupils of one or another of the already-established practitioners, initiated medical education in America.

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A sufficiently satisfactory education it was for the times, conserving the personal relationship of master and disciple to the community when personal relationship in a common cause was the bond, as a hostile environment was the bound, of the new life of a people whose voluntary separation from the homes of their fathers and the successive severance of old ties of dependence, first spiritual and then material, meant the building of a nation.

Incipiently medical education was a private enterprise, subject only to personal limitations as to its character and duration. Its process consisted in the reading of a limited medical library, the collection of drugs and simples, the compounding of often voluminous prescriptions in which each ingredient was supposed to have an operative effect upon its fellow with resultant synthetic effect upon the patient, the observation of cases of disease, the recording of symptoms and of the apparent results of medication for purposes of further study and comparison.

It was a leisurely course of education and one in which there was ample time for sedate consideration of lessons and for the gradual introduction of the pupil to the knowledge not merely of diseases, but of the individuals exhibiting them, with whom he was eventually to come into practicing relationship.

What has been called the apprentice system in medical education had its advantages, as true today as then, now largely lost in a more complex and more extensive curriculum, but to be in a measure restored, it is to be hoped, with the current improvement in sectional clinical teaching and the more general requirement of hospital service as a prerequisite to graduation. Twenty years ago, in answer to the question addressed to a third-year class in one of our large medical schools as to what that class most desired of its instructors, the answer came, "to touch a patient;" and this might well have been supplemented by "to know the doctor," for the earnest student is always eager to know what the man in practice is doing and thinking and an inkling into the practical application of what often seems the drudgery of study in the first years in the medical school is an excellent stimulus.

That there was other teaching than that from individual master to pupil must not be overlooked, for men with the gift of lecturing, unsatisfied with the limited field of the single pupil, sought wider acreage in which to sow their thought, and courses of lectures on medical subjects were instituted by many practitioners, the first forerunning indications of the next stage in medical education.

The inceptors of the co-operative stage in medical education were two men born in the same year, 1736, both graduates of American colleges, one of the College of Philadelphia, the other of the College of New Jersey. One had early the opportunity, through service in the Colonial and English armies in the French and Indian War, of measuring his attainments with those of foreign-trained surgeons and found that his acquirements were by no means commensurate with his ambition. He therefore resigned from the service and went to Europe to study. The other,

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born into a well-known medical family, found his incentive in its practice and traditions and also sought in Europe what he could not find at home.

Morgan had conceived and matured, during his studies abroad, plans for the foundation of a medical school. Returning to America in 1765 he found Shippen, who had three years preceded him, actively and enthusiastically engaged in private medical teaching and ready, with equal enthusiasm and activity, to take part in the plan set forth by Morgan in his "Discourse Upon the Institution of Medical Schools in America," delivered at the public anniversary commencement of his college, and in which he pointed out in detail the proposed curriculum, giving their proper places to the fundamental studies of anatomy, physiology, chemistry, the natural sciences, the theory and practice of medicine, surgery, and midwifery.*

In this discourse, and subsequently with the co-operation of Shippen, the plans were so cogently and vigorously urged that the college decided to found the medical school, and the two inceptors were chosen for the important chairs of theory and practice and anatomy and surgery, respectively.

In the light of some of the present propositions in medical education, the double degree and hospital service for instance, a moment may be spared to the reading of the conditions imposed in the first institution specifically devoted to instruction in the art and science of medicine in America. "The college was to confer two degrees in medicine, the bachelor's and the doctor's. As to the former it was premised that the candidate should show efficiency in the natural sciences and in Latin, and that during his studies he should attend at least one course of lectures in anatomy, materia medici, chemistry, the theory and practice of physic, and one course of clinical lectures, and should attend the practice of the Pennsylvania Hospital for one year, after which he should be admitted to the bachelor's degree. It was further provided that he must also have served an apprenticeship with some physician. To attain the doctor's degree the candidate was required to wait three years and write and defend a thesis."*

The bachelor's degree was subsequently abandoned and the doctor's degree became, as it has since remained, the one and final determination, so far as the medical school is concerned, of the fitness to practice. In the perusal of this statement it is interesting to note that the value of the apprentice system was distinctly recognized, that a measure of preliminary education was required and that one of the most important of the adjuncts to any plan of either co-operative or collaborative medical teaching, the clinical laboratory, a hospital, was already provided in the institution founded 13 years previously for the reception of acute cases, receiving the city poor without charge and paying patients only in the beds left

*"A Narrative of Medicine in America," Dr. J. G. Mumford.
**Ibid.*

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over after all charity cases had been accommodated, the paying patients being allowed to employ their own physician or surgeon.

The first medical school was speedily followed by a second, the Medical School of Kings College in New York, and it is to be noted that both of these illustrations of a new departure began with the dignity appurtenant to their being part of the highest type of general educational institution then existent and that in both the greatest stress was placed upon the value of a broad preliminary education.

But the community soon had other things than matters of education to command its attention and it was not until after the close of the Revolution that these schools changed somewhat from their original construction, but not from their original purpose and, still remaining a part of the college or university, began their educational careers.

That these careers were uniformly successful and progressive, in view of the character and standing of their initial impulse, is not to be premised; the essential element in the construction of the faculties was a personal one, adjusted relationship between the courses was wanting, and the friction and dissension which ensued was quite as much the result of lack of unification and of control in the system as of the natural tendency toward competition.

The spirit of the times in the first half-century after the Revolution was not favorable to unification of effort; individualism prevailed and the vaunted initiative of the new-found American supposed him to be fitted for the successful conclusion of any undertaking upon which he entered. Other medical schools, with the same inherent faults in their composition as those which marked the first, came rapidly into being, some of them in connection with already existent colleges, some grouped about hospitals and others upon a purely independent foundation, all more or less subsisting upon an income derived from their students, all more or less private ventures in medical education, co-operative within themselves but not in relation to each other.

The picture of one such school is sufficiently well limned to make its portrayal stand for an example. Its inceptor, afterwards a famous surgeon, graduated from the Philadelphia school and went abroad to study, returning "with a very good idea of himself, but full of useful ambition to advance medicine by teaching." At first he contented himself, like the others, with teaching private classes, but in 1817, after he had been three years in practice, he saw his opportunity and the establishment of the medical department of Transylvania University was the result.

"The school was, in effect, a private enterprise, as were so many in those years and the vicious system bred its natural results. Each man wanted to conduct the course after his own fashion, and matters of precedence were found impossible of arrangement. There was no endowment worth mentioning, and the school was dependent on the fees of pupils. There was little money left for the teachers, so the faculty came literally to blows. In 1819 another

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start was made, and for 40 years the foundation survived, until in 1859, in other times and in the hands of other men, it was finally dissolved, the greater colleges of large neighboring towns having thrown it out of action. But for some 20 years of its youth it did a useful and brilliant work. It graduated nearly 2000 students, roughly equipped for practice, and it carried on its rolls many well-known names."*

Such is the picture of what may be called the formative type of the medical school, a school having for its main purpose the immediate practical end of educating youth to apply in practice that which they had been taught; incidentally there was the stimulus to further study and to research, productive in so far as it chanced to fall upon fertile minds, but without organized outlook toward that preventive medicine which is the banner-bearer of the progress of today.

As the private medical schools increased in number and as competition became a stimulating factor it was evident that the only road to competitive success lay in the direction of keeping the education on a level with the general advance in scientific knowledge and, as a part of the necessary provision to that end, the requirement of better educative material and of better grading for the medically-educated product.

The successive requirements of an entrance examination, of examinations during the course of study and of a better grade of final examination for the degree, led to a grouping together of the private medical schools of the better class and their collaboration in the establishment of an advanced standard which, while of the greatest importance to the general uplift, still left the inferior schools to confer, on inadequate preparation, a degree constituting a license to practice, between which and the degree of the better schools the public had no adequate means of determination.

That the co-operative schools were formative implies their existence as a part of a period of transition in the general educational development of a community which was learning to find itself and their individual continuance in existence was determined by the supplanting power of an advanced educational system and their own fitness for assimilation thereby.

Of the more than one medical school for every day in the year which came into existence in the first half of the last century, more than 60 per cent. have disappeared since 1860, either by extinction or by absorption into other schools and of the remainder over 42 per cent. have either begun with, or have come to have, some form of affiliation with the general educational system through collaboration with colleges or universities.

The fact that the co-operative medical school subserved a useful purpose in its time is as true as is the other fact that it is entirely inadequate to the purpose of today, which, looking to larger issues, demands a broader educational foundation and a specialized

Ibid.

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fitting for the chosen walk in life. More than this, it confidently implies the absorption of the individual interest in the collaborative whole, that rendition of self which is expressed wherever the votaries of research are at work.

Upon a basis of a limited information the co-operative school stood primarily for individualism; the science of medicine had not then become so broad that a man might lose himself in it joyfully and exemplify Lord Dufferin's remark concerning the German entomologist whom he found in Iceland, that he was one of those earnest students, satisfied if the labor of a lifetime enabled him to add one small stone to the monument of science even though his own name might not be engraved thereon.

It is the entrance into medicine of this actuating spirit of scientific research that makes for the new issue, the new departure in medical education, for, with the accretion of precise information medicine has come to be less a field for theoretic propositions; with the advance in general scientific investigation, more an exact science. The process has been cumulative, there is an accelerative progress in the application of distinctly scientific research to the solution of medical problems and the utilization of the knowledge thus gained not merely for the relief of the individual, but for the protection of the mass.

As a natural outgrowth of this change there comes a fuller entrance of the medical profession into those sociological questions in which the doctor has always had an answering place, but rather the place of an individual worker dealing with an individual case than that of a teacher dealing with the cummunity whole, a trustee of the commodity of human life, a guardian of its conservation to useful ends.

That the incumbent of so important a trusteeship should be carefully chosen and duly fitted for his work is no longer the charge solely of a special class in the community; it has come to be a matter of large public concern. The parts of the machinery necessary to effect the desirable purpose of placing before the community specially-educated men who will be adequate to the demands made upon them as graduates in medicine are already at hand and the process of assembling them is in progress, but it will require the continued collaborative effort of the medical profession, of the universities and of a contributive public to make a worthy product possible.

Briefly to recapitulate, medical education in this country has passed from the period when the individual instruction of the practitioner to his selected pupil was enough; from the period when the aggregation of teachers in a medical school and the utilization of hospital material was enough; from the period of establishment of medical schools upon broader foundations than those merely didactic and clinical, and finds itself facing community conditions which require a definite grade of preliminary education, a large establishment of laboratories in which the student may supplement his instruction by personal investigation and a sufficient amount of prac-

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tical experience before arriving at graduation, and all this uplift within the confines of a century.

What the present century holds for medical education those of us who are privileged to see the beginning of the new departure can, in a measure, forecast from our witness of the later steps marking the entrance of medicine into the fellowship of the sciences, the comradeship of the general educational advance.

These steps have been, for the study, the substitution of microscopic for macroscopic investigation, the application of organic chemistry and physics to preparation, the creation of preventive medicine, the enlargement of the field of surgery and the recognition of the importance of hygiene for the preservation of the curative power of nature; while for medical teaching there is its formulative adoption by the university which has itself come to have more forceful meaning as the pivotal center of our educational system, its afferents the preparatory and its efferents the professional schools.

That the road to a medical education should be made to lead through the gateway of the university was practically stated by Johns Hopkins University in the requirement of a college degree, with certain modifying provisions, as the condition of entrance to its medical department. Other universities have followed this example, and the step forward is one from which there can be no retrogression; modified it may later be by provision for exception under a plan of certified fitness agreed upon by all the universities or by provisions for individual exception as already made at Harvard.

The bearing of the universities themselves toward the general adoption of the charge of professional education can be no more plainly put than in the words of members of the Association of American Universities:

"By university is understood a soundly-established institution of learning that is giving post-graduate or advanced instruction to its students.

"It is impossible to draw a distinction between university studies which are non-professional and those which are professional in their character, because, in our modern institution, much of the so-called non-professional work of the graduate department is intended as a preparation for the calling of the teacher and much of the work of the professional schools is occupied with actual research. The problems of the different departments are so connected and interwoven that they have to be treated together in the universities themselves."*

"In this country the name university in the new sense is frequently applied to one department, and that is the philosophical department. A fully-developed university, to be sure, includes at least four departments—the medical, the legal, the theological, and

*President Hadley.

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the philosophical—or, in other words, the university faculty comprises faculties of medicine, of law, of theology, and of philosophy."†

"We must widen the implication of the learned professions. They used to be classed as medicine, the ministry, law, and teaching, but now at least seven more should come under the term—the four engineering professions and that of chemistry, architecture, and landscape architecture. That institution is not a university that does not claim all the learned professions and serve them."‡

With so clearly blazed a trail the time does not seem far away when all of medical education in this country shall be carried on in the medical departments of universities, with such collaboration as shall provide not only for unity of plan, but for rational interchange of teachers and of students, a natural outcome being the establishment, for the graduation finals, of a distinct examining body and, consequently, the substitution of a national for the present uniform State registration.

Of existent private medical schools or privately-endowed institutions of research, such as are capable of doing valuable specialized work, or work preliminary to advanced work in the university departments, could continue as a tributary part of the main scheme, the remainder disappearing by absorption, by affiliation, or by the process of nature's law, of elimination by power of the overgrowth.

Many of the private medical schools with large equipments, comprising school buildings, hospital privileges, teaching faculties and an established student clientage, are quite competent to form the nucleus of a medical department to some university; some already have been, others are ready to be absorbed, but the union should be in all cases one conservant of a centralizing and unifying purpose, with the university system in control.

Dangers of duplication of medical departments which may arise should be met by collaboration of contiguous universities in the formation of one medical department for both, an instance of this kind having already arisen in the case of two large universities nearly equidistant from a populous city which formerly had within its limits two flourishing, rival, private, medical schools. One of these schools has now become the medical department of one of the universities; the other school has made propositions to the other university which, if accepted, would have favored continuance of rivalry, but the propositions have been declined and the rational result should, and will probably, be the formation of a combined department of medical research and of teaching, with the whole clinical material of the intermediate city at command.

To adequately meet the present demands of advanced medical

†President Remsen.

‡President Eliot.

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education the medical department of a university should have a faculty appointed upon the university basis and imbued with the university spirit and should be able to afford places for research workers, as well as for research and clinical teachers, under stipendiary conditions putting them above the necessity of other provision for existence.

The need for this is plainly shown in the following extract from a letter, written by an eminent and foremost investigator and teacher and the statement is as true of other lines of medical research as it is of bacteriology:

"As it is now I have six assistants who give a large amount of time to the instruction necessary, but they are paid but $250 a year each, and it can be hardly expected that they should give much of their remaining time to investigation. At the same time the salaries paid are all that the financial condition of the school permits, and this is unfortunate for two reasons—one, because, almost as soon as these men become sufficiently well trained to be able to carry on special investigation, they are obliged to leave in order to accept more lucrative work in the hospitals or in the way of practice; the other, because, at the start, it is not possible sometimes to get the best men to come into the laboratory at all for the reason that they are dependent upon their own exertions for a living from the beginning."*

Evidently the need is not of workers, but of the means to give them a living wage. The medical profession is rich in its number of eager, earnest students who ask only that they may be kept alive in the peaceful possession of time for work and who seek only the return expressed in the motto of Virchow, "The work is the best reward."

In addition to the laboratories for research and for the supply of teaching material, there must be the clinical laboratories, the hospitals, under some form of definite control so far as their uses for teaching are concerned, the ideal plan being for the medical department to have its own hospital, into which illustrative cases of disease may be received, as is the case at Johns Hopkins, or else to make the medical department the center of a group of hospitals, upon private foundation but with the major staff appointments under the control of the university, as is being done at Harvard.

Under both of these plans the collaborative relationships of the intramural and extramural laboratories and of the teaching body of the department are promoted, much time is saved and instruction correspondingly facilitated.

The promotion of collaborative relationships within the medical school itself, between its different courses of instruction, is one

*Dr. H. C. Ernst, July 17, 1901.

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of the most important considerations for the future of medical training.

The tradition of the separate professorial chairs and of a successional order of subjects, a legacy from the teaching of the co-operative period, still pertains, with the result that the logical sequences in the true relationships of these studies, from the theoretical to the practical, from the elementary to the special, are insufficiently presented.

The obvious remedy for this difficulty is the establishment of cross-relationships between the different courses of study and the introduction of elucidative portions of one course into another. In some instances this has been already, tentatively, done, with a resultantly stimulating effect upon the work of the students, warranting its further extension and ultimate permanency.

To make his efforts fruitful to others the research, or the clinical laboratory, worker must have some means for the publication of that which he has achieved. For this purpose the numerous medical journals would seem to offer a sufficient opportunity, but it is to be remembered that the majority of them are self-supporting private enterprises and that the proper and necessary illustration of scientific communications is often an expensive proposition. There should be, therefore, as a part of the equipment of the medical department, a publication system through which original work of the research and teaching staff, properly supervised, edited and illustrated, could be issued at the charge, not of the individual worker, but of the department itself.

One of the striking examples of the changes in medical practice in the past 50 years is that of the creation, the growth and, now beginning, the limitation of the specialties. Fifty years ago it was possible to graduate from one of the best medical schools without having looked into an ear, seen the fundus of an eye or even had a case of midwifery in charge. Since then these and other specialized fields of study and of practice have been exploited by general practitioners and by recent graduates who have gone to Europe for the special facilities afforded by foreign schools and have returned to start instruction of their own.

The introduction of elective studies in the latter part of the medical school curriculum, one of the fruits of university collaboration, tends to define, both for the man who is to be a general practitioner and for the prospective specialist, what has heretofore been a graduate education of purely individual selection and to put it upon its proper level in relation to the general medical education from which it has emerged.

Private graduate schools have arisen in answer to the demand for information from graduates who entered practice before specialized teaching became generally accepted in this country and,

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while such schools have admirably served their purpose in some respects, they have been open to the objections which pertain in all forms of private educational venture. Their existence emphasizes one of the obligations of the new medical departments of the universities in the formation of graduate departments, or the grouping of special studies for graduate instruction, to which the practitioner may turn for that refreshment of his knowledge demanded by the rapidly-progressive pace of medical education and in which the elective specialist may find a definitely-determined course of instruction.

The establishment of such a research and teaching plant means the expenditure of a considerable sum of money and its continued support means much more than the income possibly derivable from the tuition fees of students, especially since the effort made must be not to educate the largest number, but to educate most fitly. Under these conditions the one resource to be looked to, and justifiably because of the service rendered, is the liberal endowment of medical education.

The illustrative arguments, drawn more especially from the fields of public hygiene and preventive medicine, in favor of such endowment, regarded from a purely economic point of view, are most convincing and, while the service of the physician to his individual patient is and always should be regarded as a confidential communication, to be shrouded in the mantle of silence, the public service is a matter for public recognition. Through its proper presentation the citizen to whom fortune or success has accorded more of wealth than he can use, or knows how, personally, to apply, should be strengthened in the understanding that, in the free country which has safeguarded him, he stands as the substitute for the parental government of other States and that there is no form of his obligatory investment for the commonweal that can render so large a return as the endowment of scientific research.

The inculcation of this idea toward the formation in the community of the *habit of endowment* for medical education is a part of the teaching duty of that profession which gives of its life, its energy and its aspirations, but can otherwise only moderately contribute, because medicine is and will continue to be, in the inherent spirit of its work and as a part of its claim to existence, the comparatively unremunerative pursuit of a public utility.

Seeking to enlarge its usefulness, striving to confer, medicine, in the equitable adjustment of the shares in public service, stands as a proper medium for the expression of citizenship. With the sustaining collaboration of the universities, with the supporting collaboration of the public assured to it, it will be free to labor on in peace, unharassed by the cares of maintenance and to work out the problems before it to their solution in uses for the general good.

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Current Literature.

REVIEW IN MEDICINE.

Under the Supervision of Thomas R. Brown, M.D., Baltimore.

RECENT WORK ON THE BLOOD IN HEALTH AND DISEASE—LEUKEMIA AND THE ANEMIAS.

A very interesting paper on acute myelogenous leukemia is that of Gordinier (*Johns Hopkins Hospital Bulletin,* October, 1904), in which he reports a case of this very rare condition and gives a careful review of all the literature on the subject. As everyone knows, the acute leukemia mentioned by the authors of textbooks of medicine is always of the lymphatic variety, and Gordinier found but three works on hematology in which acute myelogenous leukemia is mentioned—those of Ewing, Grawitz, and Bramwell. Ewing saw three cases of rapidly-fatal leukemia verified by autopsies, and all of the myelogenous type, at the Roosevelt Hospital in 1897. In two of the cases the blood from the beginning was typical of myelogenous leukemia, while in the third it only became absolutely typical just before death. In Grawitz's case the condition followed a long-continued hemorrhage, due to the extraction of 14 teeth at one sitting, followed by severe stomatitis, necrosis of the jaw, retinal hemorrhage, and enlargement of the spleen. The blood picture was typical, the leucocytes being 190,000 per c. mm., of which 60 per cent. were neutrophile myelocytes and 10 per cent. eosinophile myelocytes. Death took place in two weeks' time. Bramwell mentions a case seen by him in which the blood picture was typical and where recovery occurred. In 1903 Billings and Capp furnished in the *American Journal of the Medical Sciences* an exhaustive review of this subject in which they brought forward seven cases from the literature and one of their own.

Gordinier's case was a man 56 years of age, who had been healthy with the exception of an attack of grippe until the onset of the present illness. The patient denied venereal disease of any sort, and had never used alcoholics in any form. His illness began towards the end of December, 1902, with a severe attack of bronchitis, followed in the course of a short time by great fatigue, loss of appetite, cough, sleeplessness, sweats, fever, and constant headache. He was seen by Gordinier April 4, 1903, and the striking thing in the physical examination was the marked pallor, the spongy gums, the marked enlargement of the spleen, and the blood picture. This last was quite characteristic. The hemoglobin was 28 per cent., the red-blood corpuscles 1,500,000 per c. mm., the leucocytes 260,000 per c. mm. Nucleated red cells were common, mostly normoblasts. The differential count of the leucocytes showed 61 per cent. of neutrophilic myelocytes, 4 per cent. of

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eosinophilic myelocytes, 24 per cent. of large mononuclears, and .3 per cent. of mast cells. The patient died five days after entrance to the hospital, the duration of the symptoms referable to the blood state being thus a little more than three months. This case brings the number of acute cases of myelogenous leukemia up to 12 positive and two doubtful cases.

The treatment of leukemia has always been extremely unsatisfactory, but during the past few years many investigators have claimed to have obtained a cure by means of the *x*-rays. The ultimate failure of the Roentgen rays as a therapeutic agent is the subject of a paper by Brown and Jack in the *Journal of the American Medical Association* (March 25, 1905). They report a typical case of splenomyelogenous leukemia treated by this method. At first a marked improvement was noticed, practically all the symptoms disappeared, the enlarged spleen became markedly diminished in size, the leucocytes fell from 800,000 per c. mm. to 7000 per c. mm., the myelocytes disappeared, and in every way a cure seemed to have been effected. After a few months, however, a relapse occurred, and although the patient immediately returned and the *x*-rays were sedulously applied, he became progressively worse, and died 16 months after first coming under observation. The results therefore obtained by Brown and Jack by the use of the *x*-rays in this disease were practically the same as that obtained by the usual dietetic, hygienic, and medicinal treatment of the disease—that is, marked improvement or apparent cure, followed, after a greater or less period of time, by relapse.

The close relationship which exists between pernicious anemia and leukemia is well shown in a case reported by Evans and Halton (*Journal of American Medical Association,* April 15, 1905). In this case the blood findings were very atypical, and it was difficult to decide whether the case was one of pernicious anemia or acute lymphatic leukemia. The patient was a male, 36 years of age, with nothing of importance in his past history except that two months before coming under observation he had had a severe cold and nosebleed, losing a great deal of blood, since which time he had felt weak and faint, although having but one subsequent nosebleed. The patient was fairly well developed and nourished, the lips and mucous membrane were very pale, and the spleen was not enlarged. No parasites were found in the stools. The blood examination on admission showed 1,150,000 red cells per c. mm., 30 per cent. of hemoglobin, and 7300 leucocytes, of which 91 per cent. were small lymphocytes. There were no nucleated red cells. During the 10 days between the time of his admission and the time of his death he had repeated severe hemorrhages from the nose, and the blood-count made on the day preceding the day of his death showed red cells 770,000, hemoglobin 10 per cent., leucocytes 2300, with 90 per cent. small lymphocytes, no eosinophiles, and no nucleated red cells. The most striking fact made out at autopsy was the definite changes in the hemolymph glands. Thus in the glands from the inferior vena cava the sinuses were much

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dilated, contained a large quantity of blood and a number of cells resembling swollen lymphocytes containing brown pigment, while the lymphoid tissue of the glands also showed many swollen cells containing brown blood pigment. Some pigment was also noted outside of the cells. This is the picture which Warthin has described as characteristic of primary pernicious anemia from a careful study of eight cases. This case, therefore, is one rather difficult to place, as the character of the onset and the marked relative lymphocytosis suggested acute lymphatic leukemia. On the other hand, the intense anemia, moderately high color index, the marked leucopenia before death, the preponderance of small lymphocytes (the lymphocytosis of acute lymphatic leukemia being usually of the large-cell variety), and the changes in the hemolymph glands make the authors regard this as a case of primary pernicious anemia with an atypical blood picture.

Whether to regard pernicious anemia as a disease characterized by an especial blood picture, or whether to place in this category only those cases with fatal termination, but without any definite cause, is still a subject of discussion among hematologists. All those interested in this question should not fail to read the very valuable article on the etiology and pathogenesis of pernicious anemia by Bunting (*Johns Hopkins Hospital Bulletin*, June, 1905). In this article all the facts and theories in connection with this disease are given with critical care, while not the least valuable portions of the work are those devoted to the author's original investigations in this field. That the disease is widely distributed and that there is no racial peculiarity of distribution seems undoubtedly true when we consider the various tables of statistics. As to sex, however, there is considerable difference of opinion, the German clinicians believing that the disease is more prevalent among women, while in England and America males seem to be more frequently affected. As to age, the disease is of the greatest frequency in those of middle age, but occupation, mode or station of life seem to play no *rôle*. The question of whether a definite cause can be shown to have preceded the onset of the disease is still, as it always has been, a moot question, the Germans in the main believing that a definite cause can be found in the majority of cases, while most of the English and Americans believe that the disease is idiopathic. Bunting takes up at length the various causative factors mentioned by the Germans, and shows very definitely, it seems to us, that it is very difficult for any of these to be considered the real cause of the disease except in a few cases, such as the anemia after infection with the Bothriocephalus latus. Thus Bunting believes that "one seems justified in assuming that the so-called idiopathic cases which show such uniform symptoms in blood findings, so similar a course and termination, are entitled to a position as a clinical entity, and that one may hope to find for them a single cause," although, as Bunting says, this conclusion is reached from a clinical rather than from a pathological standpoint. The pathological studies especially show that there is always a

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marked disproportion between the resisting power of the individual and the strength of the pathological agent producing the anemic state—a disproportion shown by an inability of the bone-marrow to generate a sufficient number of red-blood cells to supply the deficiency. Bunting next discusses the various possible ways in which anemia may be produced, especially in reference to this disease—"first by insufficient blood formation, second by excessive loss of red-blood cells from the circulation, third by excessive destruction of red cells, and fourth by a combination of the preceding factors or any two of them." The author discusses each of these questions at length in regard to pernicious anemia, and from this concludes that pernicious anemia is probably due to "the absorption of a toxic substance, probably of intestinal origin, which acts on the circulating blood, producing hemolysis, and through the circulation also on the marrow, resulting in a faulty hyperplasia," the symmetrical lesions found at times in the spinal cord being another evidence in favor of a circulating toxine. Bunting then gives in some detail the results of an extremely interesting series of experiments with myelotoxic and hemolytic sera, and more recently with ricin, a soluble toxalbumen from the castor-oil bean, which has a marked toxic effect upon the leucocytes and red-blood cells of the rabbit, the species of animal used in these experiments. He also carried on a series of experiments on the effect of bleeding upon the circulating blood and upon the marrow. The conclusions which he draws from his experiments are "that in hemorrhage there is created a deficiency in circulating red cells, which is met by the marrow with the mature red cells lying close to the capillaries at the periphery of the erythrogenetic groups. In large hemorrhages, with exhaustion of the supply of mature red cells, a certain number of normoblasts are called out to supply the deficiency. On the other hand, with a circulating toxine, there is destruction not only of red cells in the circulation, but also of some at least in the marrow, even of normoblasts, as suggested by the large number of naked nuclei found later in the circulation. The marrow responds in this emergency with nucleated red cells of normoblastic or megaloblastic type, depending upon the extent of the destruction. Applying these conditions to pernicious anemia, it seems possible that an analogous toxine may be present, destroying red cells both in the circulation and in the marrow, so that in the reaction nucleated red cells are used to supply the deficiency; that further action of the toxine reduces the erythrogenetic groups more or less to the megaloblastic centers, diminishing greatly the regenerating power of the marrow, and resulting in a discharge of megaloblastic cells in the hasty effort to supply the needs of the circulation." On this theory it is easy to explain why the presence of a large number of megaloblasts in the circulation is of graver prognosis than the presence of few megaloblasts and many normoblasts. Everyone interested in the subject of pernicious anemia should read this extremely valuable contribution of Bunting's.

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In connection with this subject several interesting cases have been described recently. Thus, Thompson (*Medical News,* April 8, 1905) describes a most interesting case of anemia due to infection with the Dibothriocephalus latus. In this case the reds were 608,000 per c. mm. and the hemoglobin 20 per cent. The high color index, the large number of macrocytes, the presence of normoblasts and megaloblasts and the leucopenia, with absence of the eosinophiles, made Thompson regard this case as one of pernicious anemia. Under treatment, which consisted of the usual dietetic and hygienic measures, with the administration of oleoresin aspidii, arsenic by mouth and hypodermically, Basham's mixture, and adrenalin chloride, a complete cure resulted, the reds reaching 5,980,000 and the hemoglobin 98 per cent. Two other cases of the same kind and due to the same cause are reported by Meyer in the same number of the journal.

REVIEW IN PATHOLOGY.

Under the Supervision of José L. Hirsh, M.D., Baltimore.

THE BIOLOGY OF THE MICRO-ORGANISM OF ACTINOMYCOSIS. James H. Wright. *Publications of the Massachusetts General Hospital,* Vol. I, No. 50.

To this essay was awarded the Samuel L. Gross Prize of the Philadelphia Academy of Surgery. The study is a rather exhaustive one, covering the cases of actinomycosis, with which culture experiments were made and the method of isolation employed, and a critical review of the literature of the biology of the micro-organisms of actinomycosis. The conclusions are tersely summed up as follows:

Branching filamentous micro-organisms have been isolated in pure culture from 13 cases of actinomycosis in man and from two cases in cattle. These micro-organisms seem all to be of one species, for the differences among the various strains are no greater than among various strains of tubercle or diphtheria bacilli.

The micro-organisms grow well only in agar and bouillon cultures and in the incubator. In the usual culture and at room temperature it grows very little or not at all. It is essentially an anerobe. It does not form sporelike reproductive elements. In cultures its colonies are similar in character to colonies of the micro-organism in the lesions of actinomycosis. If colonies of the micro-organisms are immersed in animal fluids, such as blood serum and serous pleuritic fluid, the filaments of the colonies in immediate contact with the fluid may, under certain unknown conditions, become invested with a layer of hyaline eosin-staining material of varying thickness, and the filaments may then disappear. Thus structures are produced that seem to be identical with the characteristic "clubs" of actinomyces colonies in the lesions.

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Inoculation experiments on animals were made with the cultures of the micro-organisms from 13 cases, including the two bovine cases. All of these strains were found to be capable of forming the characteristic "club"-bearing colonies in the tissues of the experimental animals. These colonies were either enclosed in small nodules of connective tissue or were contained in suppurative foci within nodular tumors made up of connective tissue in varying stages of development. With the cultures from most of the cases nodular lesions identical in histological character with those of actinomycosis were produced in inoculated animals, and with some of the cultures relatively extensive lesions considering the size of the animals. The most extensive lesions showed little progressive tendency, and only in a very few instances did multiplication of the micro-organism in the body of the inoculated animal seem probable. In view of the negative or ambiguous results of those who have inoculated healthy animals with actinomyces directly from the lesions, it would seem that the result of the inoculation with the cultures described in this paper afford as much proof as can be expected from such experiments that the micro-organism in the cultures was identical with the micro-organisms in the original lesions.

From his own observation and from a study of the literature Wright is of the opinion that but one species of the micro-organism is the characteristic infectious agent in typical actinomycosis, and that is one with the properties described in this paper. This micro-organism should retain the generic and specific name of *Actinomycosis bovis.*

The differences between actinomycosis from the human and bovine cases were not sufficient to justify their classification as separate species.

Wright does not accept the prevalent belief that the specific infectious agent of actinomycosis is to be found among certain branched micro-organisms, widely disseminated in the outer world, which differ profoundly from *Actinomycosis bovis* in having spore-like reproductive elements. He thinks that these should be grouped together as a separate class, with the name nocardia, and that those cases of undoubted infection by them should be called nocardiosis, and not actinomycosis. The term actinomycosis should be used only for those inflammatory processes the lesions of which contain the characteristic granules or "drusen." That a nocardia ever produces these characteristic lesions has not been convincingly shown. Because the micro-organism here described does not grow well on all the ordinary culture media, and practically not at all at room temperature, Wright does not conclude that it has its usual habitat outside of the body. He thinks that it is a normal inhabitant of the secretions of the buccal cavity and of the gastrointestinal tract, both of man and animals. In these secretions it will probably be found in the form of fragmented filaments, growing in company with bacteria, and not differentiated from them. He believes that the part played by foreign bodies so fre-

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quently found in actinomycotic lesions is not that of the carrier of the actinomycotic organism into the tissue from without, but that the foreign body, by its traumatic and irritative effects, furnishes a nidus in the tissues for actinomyces which enters therein with the secretions from the buccal cavity and gastrointestinal tract, develops into characteristic colonies, and produces lesions which we call actinomycosis. Concerning the clubs of the actinomyces colony, it is undetermined whether they are an essential product of the micro-organism itself, that is, a kind of product analogous to capsule formation among bacteria, or a deposit upon the micro-organism from the surrounding tissue and fluids. The author thinks that animal fluids are essential to their production. The chief function of the clubs is to protect the mass of the colony from the destructive action of the juices and cells of the tissue. Where the resistance of the tissues to the infection is apparently very slight, little or no club formation may occur, and the colonies may consist only of masses of naked filaments.

Concerning the importance of the bacteria which are so frequently found accompanying the specific micro-organism in the lesions, it is probable that they play an important part in the extension of the disease, although the *Actinomycosis bovis* is capable of acting as the sole infectious agent.

The so-called spores, cocci, and bacilli described by various writers in the granules of actinomyces directly from the lesions are either products of degeneration and disintegration of the filaments of the specific agent or are real micrococci and bacilli growing in symbosis with it.

In consideration of the fact that *Actinomycosis bovis* has never been shown to have a high degree of virulence for experimental animals, the progressive character of some of the spontaneous cases may be explained by the important factor of individual susceptibility or lack of resistance to the infection. The factors of secondary bacterial infection and of continuous reinfection by way of sinuses connecting with the buccal cavity and with the gastrointestinal canal may be of great importance. That such sinuses are common in actinomycosis is well known, and that repeated reinfections with this specific micro-organism, as well as others, could thus easily occur is obvious if the assumption be true that *Actinomycosis bovis* is a regular inhabitant of the buccal cavity and of the gastrointestinal tract.

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ETIOLOGY AND CLASSIFICATION OF SUMMER DIARRHEAS OF INFANCY. C. H. Dunn. *Archives of Pediatrics,* June, 1905.

Dunn gives a review of the work which has been done on the bacillus dysenteriae, and presents the results of his own observations on the study of 620 consecutive cases of summer diarrheas. The conclusions of the paper are:

1. The diarrheal diseases of infancy occurring in the summer months differ in no way, either clinically or anatomically, from the

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diarrheal diseases occurring in the cooler months, except in their much greater frequency.

2. Classification on an anatomical basis, as, for example, into functional or organic, or non-inflammatory and ileocolitis, is not convenient for etiological study owing to the variety of lesions found in cases of similar etiology and similar clinical course, and to the lack of correspondence between anatomical and clinical pictures.

3. The following classification is suggested: (a) Acute nervous diarrhea, characterized by loose stools of normal color and odor, without abnormal constituents. (b) Irritative diarrhea. Acute intestinal indigestion of the irritative type, characterized by the absence of persistent fever and by the presence of curds and undigested masses in the discharges. (c) Fermental diarrhea. Acute intestinal indigestion of the fermental type, characterized by the absence of fever and by green stools of a foul or sour odor. (d) Infectious diarrhea, characterized by the existence and persistence of fever and by the tendency of early signs of ileocolitis, as shown by the presence of blood and excess of mucus in the discharges. When a specific organism, the bacillus dysenteriae, is proved to be the cause the case may be further particularized by the term infantile dysentery. (e) Rare cases occur, corresponding to the known description of heat exhaustion and cholera infantum.

4. Of the above differentiated types, the indigestion, including the irritative and fermental cases, is by far the most common.

5. The chief or primary cause of all the above types is the increased heat of the weather during the summer months, which probably acts in the non-infectious cases by producing functional disturbances either of the nervous system or of the digestion, and which acts in the infectious cases by producing in the intestine conditions more favorable to the occurrence of infection. The name thermic diarrhea can be given to the entire group.

6. Bacteria are the secondary cause of a certain number of cases, such cases being mainly, if not wholly, of the type classified as infectious.

7. Infection occurs by the introduction of bacteria from without or by autoinfection with bacteria already in the intestine. The latter is probably the usual method.

8. The bacillus dysenteriae is the cause of most of the infectious cases. Whether it is the sole cause remains to be determined.

9. The bacillus dysenteriae can often be found in the intestines in cases where it probably has no causal relation with the pathologic processes. Such cases are usually clinically of the non-infectious type.

10. Other organisms are probably the cause of some infectious cases.

11. The anatomical changes of various kinds included under

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the term ileocolitis may occur in any of the above clinical types except the acute nervous. Anatomical changes of some kind probably occur in all infectious cases.

* * *

A PRELIMINARY REPORT ON THE OCCURRENCE OF SPIROCHAETE IN THE LESIONS OF SYPHILIS. Schaudinn and Hoffman. *Arbeiten a. d. Gesundheitsamt.*, Bd. XXII, p. 524.

The short communication gives the very interesting fact that in the superficial syphilitic lesions and chancres, as well as in the deeper tissues and in indolent lymph glands, true spirobacteria were found in fresh as well as in stained sections. They were able to distinguish two varieties of bacteria—one with sharp coils more like a corkscrew, which they called the S. pallida; the other is larger, takes the stain better, and its coil is more undulating. It is difficult to stain the S. pallida, and it has proved impossible to cultivate it. It varies from 4 to 14 microns in length, while it is less than .25 microns in diameter, with 6 to 12 turns in its spiral. They are very delicate and actively motile. Their report was based on eight cases.

Much confirmatory evidence has been published since the above article first appeared. Only a few days later Metchnikoff published his results (*Sem. Med.*, 1905). He reports the finding of spirilla in four syphilitic individuals and four artificially-inoculated apes. Levaditi (*Presse Médicale*, Paris, No. 43) reports three cases of congenital syphilis in which the spirochaete pallida was discovered in the cutanous lesions and in the organs of newborn infants. Control research on other infants was invariably negative. The spirochaetae were found in the first infant in the vesicles of hereditary syphilitic phemphigus and in incipient cutaneous papules. In the second infant they were found in the papules, in the spleen, lung and liver, and in the third in the phemphigoid lesions, spleen, and liver.

More recently Fraenkel (*Münch. med. Woch.*, June 13, 1905) has contributed an interesting report to the subject. He was able to demonstrate the spirilla in six cases. He was able to obtain them in the juices of glands as well as in the chancres and papules. He lays especial stress upon the difficulty encountered in seeing these fine, slender organisms except with the highest magnification. In some cover-glass preparations he was able to find a few only after several hours' search; in others they were more numerous. In all other non-syphilitic material Fraenkel was unable to find any of these bodies.

R. Kraus (*Wiener klin. Wochenschr.*, 1905, p. 592), after presenting his observations on the subject, concludes "that we must in all probability accept the S. pallida as the causative agent in syphilis.

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PROCEEDINGS

OF THE

MEDICAL AND CHIRURGICAL FACULTY

OF MARYLAND

Editorial and Publishing Committee.

ALEXIUS MCGLANNAN, M.D. HENRY O. REIK, M.D. JOHN RUHRAH, M.D.

Secretaries of the County Societies are earnestly requested to send reports of meetings and all items of personal mention and of local or general interest for publication addressed to Dr. Alexius McGlannan, 847 North Eutaw Street, Baltimore.

PROGRAM.—The committee of arrangements wishes to again call the special attention of members to the semiannual meeting of the Medical and Chirurgical Faculty, to be held at Deer Park on the 21st and 22d of September.

While the attendance at these fall meetings has improved the past few years, it is still neither as large nor as representative as it should be. The Faculty is now in the most flourishing and active condition in its history, and this should be expressed by a large attendance at Deer Park.

Much effort has been expended to make the program attractive. The opening meeting will be held September 21, at which brief reviews of medical progress along special lines will be given by Drs. Frank Martin, Thomas B. Futcher, Guy L. Hunner, and F. D. Sanger, to be followed by an address by Dr. W. S. Thayer. The morning session, September 22, will be devoted entirely to volunteer papers.

For the afternoon the Faculty will be the guests of the Allegany and Garrett County medical societies. A complimentary luncheon will be followed by a drive through some of the beautiful Allegheny-mountain scenery and country surrounding Deer Park.

At night the visitors' address will be delivered by Dr. Charles A. L. Reed of Cincinnati, Ohio, well known as chairman of the committee on medical legislation of the American Medical Association and for his recent able, vigorous and widely-discussed

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report of the sanitary conditions existing at Panama. His subject will be "The American Family," a live topic at the present moment.

Announcement will be made later of the meetings of the House of Delegates. Most vital and important business awaits their action.

With an interesting program and the vacation attractions of the Deer Park Hotel, it is difficult to conceive a pleasanter two days' outing for a medical man and his family. The special rates, both railroad and hotel, are remarkably low.

Members purchasing the special round-trip excursion tickets must show the identification slips enclosed with each copy of the official program, to be mailed about September 12. Any member wishing to reserve hotel accommodations can do so by writing in advance to the manager of the Deer Park Hotel, Deer Park, Md.

It should be a pleasant duty for our busy practitioners to lay aside their work for a few days and make this meeting an enthusiastic success.

THE SEMIANNUAL MEETING, which will be held at Deer Park on the 21st and 22d of September, promises to be one of the most successful fall meetings which the Faculty has had for a long time. The program will be of unusual interest and not too long, so that there will be plenty of time to enjoy the mountains and the other features of the trip which are of a vacation interest. The meeting has been planned to furnish a pleasant outing, which will come just before the hard winter work. The rates are so low that no one who wants a little trip can afford to miss this one. The round-trip on the Baltimore & Ohio Railroad will be only $5, and the hotel will grant members and their families a rate of $2 a day per person, which is just half their regular rate. The tickets are good from the 21st to the end of the month, so that those who want to stay over for the week end or longer may do so. The mountains are in their greatest glory at the time of the meeting. Those who have been to Deer Park need no encouragement to go a second time; to those who have never been we may say that it is one of the most delightful mountain resorts to be found anywhere and well worth a visit. A large number have already signified their intention of going, so that there will be plenty of company for the spare hours, and a good time is promised. As at Ocean City last year, the wives and families of the members will be most welcome, and this will be a splendid opportunity for our members to give their families an inexpensive outing.

THE DELEGATES from the county societies are urged to be present at the semiannual meeting to attend the meeting of the House of Delegates. Matters of great importance will come up at these meetings, and it is necessary to have a full attendance. The subject of a new medical-practice act will be discussed, and it is expected that the report of the committee on drafting a new law will be made at this meeting. In addition, there are other matters of

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legislative interest. Among these is the question of county health inspectors.

BALTIMORE COUNTY had passed by the last legislature a bill which provided for medical inspectors in the county very much in the same way that there are inspectors in the city. This plan has worked admirably. Carroll county is interested in the same plan, and it has been suggested that it would be a good plan for every county in the State to follow. If the other counties wish such a provision, one bill could be passed which would cover all the counties in the State. Delegates are urged to discuss this matter fully with the members of the profession in their counties and come prepared to give an opinion of what their respective counties wish to do in the matter. Further information can be obtained by writing to the secretary of the Faculty.

PROCEEDINGS OF THE ANNUAL MEETING.

Members of the Medical and Chirurgical Faculty of Maryland:

Ladies and Gentlemen—Before entertaining a motion for the adjournment of this meeting I have a pleasant duty to perform and announcement to make. Some time since friends of Dr. Osler, to whose most inspiring address you have just listened, arranged for the painting of his portrait to be presented to this Faculty. The presentation was to be made by Dr. George J. Preston, who has been most active in securing the portrait and who, as chairman of the library committee of the Faculty for many years and a most active worker in the upbuilding of the library, has had most excellent opportunities of knowing what Dr. Osler has done and the enthusiasm which he has aroused among many on behalf of the Faculty, especially of its library. No one regrets, I am sure, more than Dr. Preston that illness prevents his presence with us this afternoon and the fulfillment of the promise which he had made to deliver the address of presentation. It was indeed only at the last moment that he felt constrained to admit the impossibility of his being with us. In the absence of Dr. Preston, Dr. Robert Johnson has consented, at very brief notice, to perform this very pleasant duty, and I now have the pleasure of introducing Dr. Johnson.

Dr. Johnson: Mr. President, Ladies and Gentlemen—I am sure you will regret Dr. Preston's illness as much when I am through as I do at the outset. Last week, as I came into my office, I found a boy with tears streaming down his face. I asked him what was the matter. He replied, "My mother is a widower and my father he cusses." Now, that boy had some trouble, but he failed to explain. We are in just that condition; we are hit hard, but don't know which wound hurts the most. Is it that we are losing a distinguished man? Is it that we are losing a respected and beloved teacher? A public-spirited citizen? Yes; these are elements of our sorrow, but back of it all, and deeper than all, we feel that we are losing a kindly man. It means for us that we shall no longer hear the genial invitation to drink a cup of tea with him, that the hospitable door of his delightful home

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will be shut; no longer, sir, that waving hand from the cab window as he hurries along; that wrist-drop of his, with human kindness oozing, like Bob Acre's courage, from his finger tips. It is the man we shall miss!

Dr. Osler has just mentioned Elijah in his address. Taking up the parable where he left it, we say to him: "Go up, thou baldhead. Go up, thou baldhead, but do not forget to drop thy mantle on us, thy children, to console us for the loss of thee." It is said that good Americans go to Paris when they die. It is natural for good Englishmen to go to England before they die, but when you get good and tired of England, Dr. Osler, meet us in Paris. Gentlemen of the Faculty, I know no one who has done as much for our Faculty as Dr. Osler. In season and out of season he has spent his time and money for our welfare and development, nor has the interest and kindness of the Doctor been limited to this work. Whether it be around the corner or across the continent, Dr. Osler has never turned a deaf ear to a doctor's appeal for help or advice. There is not a man in this Faculty that does not feel the impress of such a life among us, not one that does not have a miniature of Osler near his heart. Therefore, ladies and gentlemen, glad as we are to have this certified presentment in his portrait, you can see Osler in what is best in each of us.

"Si monumentum requiris, circumspice."

Dr. Brush: Dr. Johnson, Fellow-members of the Faculty, Ladies and Gentlemen—I am no orator—as Johnson or Osler is—and find myself, therefore, in a very embarrassing position in acting as the representative of the Faculty in accepting this portrait. Moreover, my personal feelings and my sense of the loss which I and you, fellow-citizens of Maryland, and, indeed, the whole country, are about to sustain are such that I cannot find words to express the emotions which fill my heart.

I have, I believe, known Dr. Osler as long, possibly longer than anyone in this audience. It is now some 28 years since, as a young man, I appeared before the Canadian Medical Association with a paper upon some pathological subject connected with the brain and its disease. After I had concluded, an old medical friend took me by the arm and said, "I want to introduce you to a rising young pathologist, who, I think, you will find is well informed on the topic you have been discussing." It was Dr. Osler. I did find him well informed, and soon felt like hiding my diminished head when he showed how deep and thorough was his grasp of the subject. His kindness, his attempt at effacement of self and his superior knowledge, his ready willingness then and in all the years since then to forward the work and studies in which I was engaged I need not tell to any physician in this audience. It was an exhibition of one of the traits which has made us all love him.

Curiously enough, I seem to have followed Dr. Osler about. He went to Philadelphia in 1883, and in 1884 I went there also. From Philadelphia he came to Baltimore in 1889, and two years afterward I came to Maryland, and have lived so near Baltimore that I have felt like a Baltimorean. Here the resemblance in our moving from place to place will no doubt cease. There is not the least probability that I will be called to England, but, loving my country as I do, I should be strongly tempted to go to England if I could be assured of such an audience to bid me godspeed and farewell in

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the same loving and yet regretful spirit that you are showing toward Dr. Osler today.

In the name and in behalf of the Medical and Chirurgical Faculty of Maryland I accept this portrait, but what are we to do with it, where shall we place it? A few years ago I went into the hall of the Faculty on Eutaw street. The pictures of some of the men who have been an honor and an ornament to the profession here in Maryland and have sent the fame of American medicine throughout the world are in that hall. I found them not hanging upon the walls, but carefully taken down, so that the rain, which was coming in through the roof, and the dampness in the walls might not injure them. Those men, men and women of Baltimore and Maryland, attended you or your fathers and mothers from the hour of birth until they ceased to work. They have eased your pains or those of many dear to you, they have guarded you from disease and brought back to your cheeks the bloom of health, and they have closed the eyes of your loved ones in death. They deserve a better memorial than has yet been raised to their memories, a better and safer place in which to place their portraits.

They and those who came after them have built up, have accumulated a most valuable medical library, which is placed in the same building, a building which today, tonight, any time, may go up in flames. It may be, probably is, insured, but no money can replace some of those books. That library is used by the profession of Baltimore and Maryland, not for its own selfish purposes, not from the desire to gather knowledge for its own sake, but for your good, my hearers. It is your library in a very wide sense, used for your benefit, and valuable, and alone valuable, as and because it is so used.

Some months ago a committee was formed to solicit subscriptions toward a fund to place those portraits and that library in a fireproof building—a building which would afford also a meeting place for the various medical societies of the city and this State organization, a building which would be an ornament to the city and the pride of the profession.

This movement had its origin in a desire to mark in some way our appreciation of Dr. Osler's services to this Faculty, services which have been of inestimable value in building up the library and in fostering in the profession that "unity, peace and concord" which has formed the topic of his farewell address.

No testimonial I know would be more acceptable to him than to be told that out of a desire to show our affection for him, our appreciation of his work for the profession and his contributions to scientific medicine, this building, which has been one of the cherished hopes of his life, had at last been erected.

Many generous subscriptions have been made, many members of the profession have subscribed more, I know, than they really could afford, but much remains to be done, and it is to you, for whose benefit, after all, citizens of Maryland and Baltimore, the library exists and these societies have been organized, it is to you that we look to complete the sum needed.

I feel sure many of you will feel gratified to have an opportunity to this

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express your affection for some family physician, either now living or gone to his reward, and to show your appreciation of the life Dr. Osler has lived and the work he has done here in Maryland for you and for medical science. We ask you, in the words of another, soliciting aid for a public purpose, to determine what you think you can subscribe, and then—to double it.

As for this picture, we will cherish it as we will cherish in our hearts and exemplify in our professional lives these last words of our most beloved friend and associate.

Society Reports.

THE JOHNS HOPKINS HOSPITAL MEDICAL SOCIETY.

MEETING HELD MAY 15, 1905.

Clinical Features of Thyroid Hypertrophy.—Dr. Halsted said that one or more of the symptoms usually known as "exophthalmic goiter" might occur with various pathological conditions in the thyroid. Cysts, adenomata, carcinomata, and even "normal" thyroids had given such symptoms. No sharp line, indeed, could be drawn between perfectly normal people and those with extreme hypertrophy. The well-known symptom-complex is sometimes present without hypertrophy of the gland. The condition is more frequent in females (4.6 to 1), though late in life the proportion is smaller. The prognosis is bad, and it is doubtful if complete recovery has ever occurred. Twenty-five per cent. of all the patients die within a short time, and the rest remain in a state of labile equilibrium. Acute cases occur; one, reported in *Nothnagel,* appeared in two days and disappeared in eight. The mild form of the disease has been particularly studied by the French, but all observers have noticed that there is no sharp line of demarcation between normal patients and those with mild goiter. In the cystic cases there has usually been no hypertrophy of the non-cystic portions of the thyroid. In the Johns Hopkins Hospital there have been 46 cases of goiter with symptoms operated upon. The majority of these were mild, but a few were severe. There was one death in the series, and in this case nearly three-fourths of the gland was removed. At present non-operative treatment is being tried, and the *x*-ray is being used instead. The influence of this agent has been marked in certain of the reported cases, but it is not prompt.

The Pathology of Exophthalmic Goiter.—No sharp line, said Dr. MacCallum, could be drawn between the microscopic picture presented by a normal thyroid and the thyroid of a patient with exophthalmic goiter. Aside from the changes in the thyroid itself, there may be in this disease general lymphatic hyperplasia, affecting the thymus, the glands of the neck, and the lymphatic follicles in the thyroid itself. Changes in the body musculature, in the corpus restiforme, and in the sympathetic ganglia were also described. In the thyroid itself the most recent papers on the subject, from

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the clinics of Mikulicz and Kocher, state that there is no definite or constant pathological change, but a study of the 28 cases seen at the Johns Hopkins Hospital leads to the conclusion that exophthalmic goiter *does* present a constant pathological picture, that this picture varies greatly in degree, that the change is sometimes focal rather than diffuse, and that for this reason it may be quite overlooked. The change seen is similar to that produced experimentally by Halsted in his work on dogs. This consisted in an increase in the size of the alveoli, an increase in height of the lining cells, and a heaping up of the alveolar walls into folds. In some cases growth of the stroma took place into the parenchyma with the formation of diverticula. The colloid material might be well preserved, but often it was much diminished in quantity, and had the appearance of granular or thin fluid material. In the small alveoli it might be wanting. Retraction of the colloid so often observed was probably due to the action of fixatives. Sometimes the epithelial cells were five or six times as high as they were broad. The so-called "colloid" cells (high and thin, with deep-staining nucleus and faint pink-staining protoplasm) could be seen in the specimens, as well as the "Schmelz epithel," composed of degenerated cells, which might be lifted free from the base on which they originally lay, and lie quite loose in an alveolus. The connective tissue was increased in amount, making the specimen firm and dense. The glands were very vascular and grayish in color. The parathyroids, which have so often been blamed for the symptoms of exophthalmic goiter, were found normal by Dr. MacCallum in the nine cases examined. One or two showed some sclerosis.

These pathological changes were much like the ones produced experimentally by Dr. Halsted. It seems probable that exophthalmic goiter is due to a hypersecretion by the thyroid, but the cause of an increase in secretion beyond the amount needed by the economy is not clear, and the disease is really without ultimate explanation. Overman has pointed to the fact that certain cases follow influenza, streptococcus sore throat, etc., and infection may be the cause of the disease. A constant focal change in thyroid, varying in degree, together with normal parathyroids, are the essential pathological features of the disease.

Dr. Bloodgood referred to the recent good results reported by Abbe from the use of radium in exophthalmic goiter.

Book Reviews.

Receipt is acknowledged of the following books:

THE DISEASES OF SOCIETY. By G. Frank Lydston, M.D. Philadelphia: J. B. Lippincott Company.

LIFE-INSURANCE EXAMINATION. By B. Symonds, A.M., M.D. New York: G. P. Putnam & Sons.

INTERNATIONAL CLINICS. By A. O. J. Kelly, A.M., M.D. Philadelphia: J. B. Lippincott Company.

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INFLUENCE OF FOOD PRESERVATION AND ARTIFICIAL COLORS ON DIGESTION AND HEALTH. By J. M. Wiley, M.D. Washington: Government Printing Office.

THE OPHTHALMIC YEARBOOK. By Edward Jackson, A.M., M.D. The Herrick Book & Stationery Co.

GYNECOLOGY: MEDICAL AND SURGICAL OUTLINES FOR STUDENTS AND PRACTITIONERS. By Henry J. Garrigues, A.M., M.D. Philadelphia: J. B. Lippincott Company.

PROGRESSIVE MEDICINE. By H. A. Hare, M.D. Philadelphia: Lea Bros. & Co.

THE URINE AND FECES IN DIAGNOSIS. By Otto Hensel, Ph.G., M.D., and Richard Weil, A.M., M.D., and S. E. Jelliffe, M.D, Ph.D. Philadelphia: Lea Bros. & Co.

NORMAL HISTOLOGY AND MICROSCOPICAL ANATOMY. By Jeremiah S. Ferguson, M.Sc., M.D. New York: D. Appleton & Co.

THE EYE, MIND, ENERGY, AND MATTER. By Chalmers Prentice, M.D. Published by the author.

THE OPEN-AIR TREATMENT OF PULMONARY TUBERCULOSIS. By F. W. Burton Fanning, M.D. Chicago: W. T. Keener.

MANUAL OF PSYCHIATRY. By J. Rogues de Fursac, M.D. Authorized translation from the French by A. J. Rosanoff, M.D. New York: J. Wiley & Sons.

INTERNATIONAL CLINICS. By A. O. J. Kelly, M.D. Philadelphia: J. B. Lippincott Company.

OPERATIVE SURGERY. By Joseph D. Bryant, M.D. Vols. I and II. New York: D. Appleton & Co.

THE JOHNS HOPKINS HOSPITAL REPORTS. By J. M. Flint. Vol. XII. Baltimore: Johns Hopkins Press.

ACUTE CONTAGIOUS DISEASES. By William M. Welch, M.D., and J. F. Schamberg, A.M., M.D. Philadelphia: Lea Bros. & Co.

A MANUAL OF PRACTICAL HYGIENE FOR STUDENTS, PHYSICIANS, AND MEDICAL OFFICERS. By Charles Harrington, M.D. Philadelphia: Lea Bros. & Co.

PRACTICAL DIETETICS, WITH REFERENCE TO DIET IN DISEASES. By Alida Francis Pattie. Third edition. New York: A. F. Pattie.

EQUANIMITAS AND OTHER ADDRESSES. By William Osler. Philadelphia: P. Blakiston's Son & Co.

THE DIAGNOSIS OF DISEASES OF WOMEN. A Treatise for Students and Practitioners. By Palmer Findley, B.L., M.D. Philadelphia: Lea Bros. & Co.

HEALTH AND DISEASES IN RELATION TO MARRIAGE AND THE MARRIED STATE. By Prof. De H. Senator and M. L. Skaminer, M.D. Vol. II. Rebman & Co.

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TRANSACTIONS OF THE AMERICAN PEDIATRIC SOCIETY. Sixteenth Session, held at Detroit, Mich. Edited by L. Edford La Fetra.

PROGRESSIVE MEDICINE. By Hobart Amory Hare, M.D., assisted by H. R. M. Landis, M.D. Philadelphia: Lea Bros. & Co.

A PRACTICAL TREATISE ON FRACTURES AND DISLOCATIONS. By Louis A. Stimson, B.A., M.D., LL.D. Philadelphia: Lea Bros. & Co.

ADDRESSES AND OTHER PAPERS. By William W. Keen, LL.D. Philadelphia, New York and London: W. B. Saunders & Co,

PSYCHIATRY. By Stewart Paton, M.D. Philadelphia: J. B. Lippincott Company.

THE PHARMACOPEIA OF THE UNITED STATES. By Authority of the United States Pharmacopeial Convention. Philadelphia: P. Blakiston's Son & Co.

A TEXTBOOK OF PHYSIOLOGY. By Winfield S. Hall, Ph.D., M.D., Leipzig. Philadelphia: Lea Bros. & Co.

INTERNATIONAL CLINICS. By A. O. J. Kelly, M.D. Vol. II. Philadelphia: J. B. Lippincott Company.

THE URINE AND FECES IN DIAGNOSIS. By Otto Hensel, Ph.C., M.D., and Richard Weil, A.M., M.D., in collaboration with Smith Ely Jelliffe, M.D., Ph.D. Philadelphia and New York: Lea Bros. & Co. 1905.

In this work the portion devoted to urinary analysis offers nothing especially new, although the subject-matter is arranged very conveniently and systematically. The portion devoted to the methods of the examination of the feces, however, is especially valuable, because of the fact that this branch of physical diagnosis is so much neglected. Not the least valuable portion of this section is a discussion of the intestinal bacteria, based largely on Ford's valuable investigations on the subject. B.

THE yellow-fever situation in New Orleans appears more favorable at present. About 1200 cases have been reported since the discovery of the outbreak, and the mortality has been about 15 per cent. The work of screening and oiling cisterns has been vigorously prosecuted, and several prominent citizens have been penalized for neglect to comply with the regulations on this subject. A good many cases of yellow fever have been concealed from the authorities. In one instance a prominent family did not call a physician for fear that he would report the illness of a daughter of the house. The death of the young woman brought the facts to light. The health authorities were for a time seriously hindered in their work by the activity of Dr. R. B. Leach, a homeopathic physician from St. Paul, who claimed that people could be immunized against yellow fever by small daily doses of arsenic. This absurd proposition interested a good many people, and, of course, the newspapers gave space to Dr. Leach and his followers. Fortunately, this misguided man was not clever enough to keep alive the agitation which he started.

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MARYLAND MEDICAL JOURNAL.

JOHN S. FULTON, M.D., *Editor.*

Associate Editors:

THOMAS R. BROWN, M.D. | HUGH H. YOUNG, M.D.
ROBERT REULING, M.D. | JOSE L. HIRSH, M.D.

BALTIMORE, SEPTEMBER, 1905

THE CANCER MORTALITY OF BALTIMORE.

DR. JONES' interesting tables of cancer mortality (p. 337), like most American mortality tables, illustrate the common weakness of American vital statistics better than the history of cancer during the 14 years covered by the study. As Dr. Jones remarks, a satisfactory study of the cancer question is possible only when detailed information is available concerning the population, and he says that a census of Baltimore is to be made in January and February, 1906.

THE PROBABLE SIGNIFICANCE OF THE TABLES.

LIKE most hygienists, Dr. Jones is wary of the apparent increase which the figures indicate, and he proceeds to show that the increase, if any, is found in cancer of the liver and stomach. He evidently inclines to the view that improving diagnosis explains the rising figures.

Assuming the population figures to be approximately true, it is possible to bring the general increase into comparison with the increase of cancer in more recondite situations by the following somewhat laborious process: Taking the first five years (1891-95) as a norm, one calculates the cancer mortality for each succeeding year by applying the population factor for each year to the average cancer mortality for the five-year period assumed as a norm, and comparing the calculated mortality for each year with the mortality actually recorded.

Average population, 1891 to 1895..... 456,793
Average cancer mortality, 1891 to 1895..... 211.2
Average mortality from cancer of the stomach, liver, uterus, and rectum, 1891 to 1895..... 103.2

	Population.	Population factor.	Calculated cancer mortality.	Actual mortality.	Difference.
1896.....	479,149	1.05	222	276	+ 54
1897.....	486,601	1.065	225	259	+ 34
1898.....	494,053	1.081	228	256	+ 28
1899.....	501,505	1.091	230	280	+ 50
1900.....	508,957	1.112	235	253	+ 18
1901.....	518,000	1.131	239	299	+ 60
1902.....	525,000	1.141	241	311	+ 70
1903.....	533,000	1.166	246	311	+ 65
1904.....	541,000	1.184	250	375	+ 125
			2106	2620	+ 514

From these figures it appears that the total cancer mortality for the nine years, 1896 to 1904, exceeds that which the experience of the five years, 1891

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to 1895, should have given by 514 deaths, or an apparent increase of 24.4 per cent. for the last nine years.

Applying to the average mortality of the first five years from cancer of the stomach, liver, uterus, and rectum, the population factor for each year from 1896 to 1904, we get the following table:

	Calculated mortality from cancer of the stomach, liver, uterus, and rectum.	Recorded mortality.	Difference.
1896	108	168	+ 60
1897	110	150	+ 40
1898	112	141	+ 29
1899	113	178	+ 65
1900	115	168	+ 53
1901	117	184	+ 67
1902	118	177	+ 59
1903	120	172	+ 52
1904	122	221	+ 99
	1035	1559	+ 524

These figures indicate that the mortality actually recorded under the head of cancer of the stomach, liver, uterus, and rectum during the past nine years exceeds that which the experience of the five years, 1891 to 1895, promised for cancer in these anatomic sites by 524 deaths, an apparent increase of 50.6 per cent.

A SOUTHERN MAN'S VIEW OF THE MOSQUITO THEORY OF YELLOW FEVER.

A PROMINENT citizen of New Orleans who has exceptional opportunities to know the trend of professional opinion, in discussing the yellow-fever situation with a Baltimore physician, said: "I do not believe that the mosquito theory has been clearly stated by the medical profession to the people of the South. When the yellow fever came upon us we had not been told about the work done in Havana; at least we were not impressed as we should have been with the view that the same methods would give the same results in New Orleans. We believe in our medical men and are guided by their advice, even though we have seen their yellow-fever theories come and go. In 1899 we were told that domestic pets, cats and dogs, were the chief agents in the spread of yellow fever, and we submitted to stringent regulations based on this theory. We had always been told that yellow fever spared children, attacking only adults, but in the 1878 epidemic children died in large numbers, and this circumstance caused us to doubt that the epidemic of 1878 was one of yellow fever. On account of the large mortality among children many New Orleans people, some of them physicians, still believe that a strange disease, not yellow fever, attacked New Orleans in 1878. I believe, of course, that it was yellow fever, but the epidemic upset our traditional views about the immunity of infants and young children. We have accepted the mosquito theory in New Orleans, but we did so after the yellow fever arrived. I can't help thinking that if the physicians had pressed the matter on our attention much earlier we would have prepared ourselves against an invasion of yellow fever. It is a business proposition to us. The natives of New Orleans are not afraid of yellow fever. Its ravages do not fall on us, but on the unacclimated. What we fear is the quarantine, which involves discomforts of which you Northern people know

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nothing. We run away, if we can, but it is the quarantine, and not the yellow fever, that makes us run."

If the views of this gentleman are shared by a considerable body of thoughtful citizens of New Orleans, considerable mental discomfort has been fairly earned by the Southern sanitarians who have hitherto avoided open and complete acceptance of the mosquito theory lest they should stir up strife among the Southern people. The remarks which we have quoted ought to land heavily on the professional conscience. If popular opinion in the South had, in fact, been as refractory to this question as its medical men declared, the people of New Orleans would not have capitulated as promptly as they did in the presence of yellow fever. Their acceptance of the mosquito theory under such circumstances probably does not signify a very intelligent belief, but it clearly indicates very shallow doubt. It is incredible that the people would have abandoned rooted error just for expediency's sake, and it seems likely that the Southern people will follow medical advice in medical matters, at least as faithfully as their compatriots generally do, and that notwithstanding the instability of medical opinion on many subjects.

MRS. ABELL'S ARTICLES ON SAFE FOODS AND HOW TO GET THEM.

It is of hopeful significance that so many of the popular magazines have recently published articles on the question of pure food. Most of the papers on this subject have been of very little practical value. Some of them have been highly sensational and misleading, but they no doubt signify a popular awakening to the importance of good food, and they have helped to increase the demand for reliable information.

The *Delineator* has undertaken to supply such information in a series of articles by Mrs. Mary Hinman Abell. It is an appropriate task for the *Delineator*, and that periodical has been fortunate in the choice of an author. There are to be 12 articles in the series, and the first one appears in the September issue. Mrs. Abell commences her task in a very hopeful spirit. The truth that lies between the cry of fraud and poison, on one hand, and the extravagant claims of food vendors, on the other, she thinks may easily be found out by any sensible woman whose domestic instincts are in good working order. She insists that this is a woman's problem, and that the complex machinery which has apparently reduced her to a mere receiver of food materials can be made as sensitive to her wishes as the looms which weave her raiment. Responsiveness more perfect than this none need desire. It is no more difficult, she says, to be informed about the qualities of foodstuffs than to be a discriminating buyer of textile fabrics, and the range within which a woman may easily be an expert buyer of food is no more extended than the same woman's field of expertness in the purchase of clothing. Food vendors are no more prone than other commercial people to defraud their customers. Many of them are themselves well informed about the materials which they distribute and more than willing to meet the demands of intelligent buyers. But so long as family orders are sent by telephone and deliveries are accepted without examination, and so long as food laws do not, in fact, prevent the abuses which are supposed to disappear under their provisions, the standards of the market must obey the practice not of the best, but of the worst vendors. Reform is waiting, not upon the commercial conscience or on the operation of law, but upon the appearance of a large class of intelligent buyers, and these must be women.

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Summary of Results of Examination Held by the Board of Medical Examiners of Maryland, June 21, 22, 23 and 24, 1905.

No.	College of Graduation.	Anatomy	Surgery	Pathology	Obstetrics	Practice	Chemistry	Materia Medica	Therapeutics	Physiology	Total	Average
1	University of Maryland, '04	60	95	51	100	79	62	88	83	75	693	77
2	University of Maryland, '05	90	95	89	85	86	67	88	92	89	781	86
3	University of Maryland, '05	75	90	76	90	80	51	84	88	70	694	77
4	University of Maryland, '05	61	80	90	84	80	86	78	78	75	712	79
5	University of Maryland, '05	80	80	87	85	71	80	95	90	82	750	83
6	University of Pennsylvania, '02	89	98	90	100	94	89	95	93	76	824	91
7	University of Maryland, '05	84	80	89	84	87	76	76	85	79	740	82
8	College of Physicians and Surgeons, '01	76	95	61	85	76	46	82	83	71	675	75
9	College of Physicians and Surgeons, '05	78	85	87	90	86	63	84	80	79	732	81
*10	Baltimore Medical College, '04	..	..	76	..	..	86	..	..	..	..	..
11	College of Physicians and Surgeons, '05	94	90	70	85	76	76	78	87	65	721	80
*12	Maryland Medical College, '01	75	..	61	..	..	..	..	..	..	..	..
13	College of Physicians and Surgeons, '05	92	85	79	84	88	91	85	80	75	759	84
*14	University of Maryland, '04	76	..	83	..	..	79	..	..	..	..	..
15	University of Maryland, '05	94	98	90	90	75	93	89	81	90	800	88
16	Johns Hopkins, '05	70	90	73	92	79	90	60	65	90	709	78
17	Woman's Medical College of N. Y., '90	28	85	28	75	62	25	78	75	55	511	56
18	University of Maryland, '05	59	80	72	85	76	64	81	83	78	678	75
19	Maryland Medical College, '05	63	80	30	100	73	28	71	58	68	571	63
†20		..	..	..	..	..	..	..	..	..	..	..
21	University of Maryland, '05	83	85	75	100	87	77	86	89	70	752	83
22	Maryland Medical College, '03	..	..	65	..	..	67	..	..	..	..	..
†23		..	..	..	..	..	..	..	..	..	..	..
24	University of Maryland, '05	95	90	85	80	86	73	78	88	89	764	84
25	Maryland Medical College, '05	90	75	80	90	80	75	80	75	75	720	80
26	Baltimore Medical College, '05	75	85	94	92	89	80	76	87	84	762	84
27	Johns Hopkins, '05	85	85	98	100	93	78	75	92	87	793	87
‡28	University of Maryland	86	..	..	..	..	75	80	..	75	..	..
29	Baltimore Medical College, '05	93	95	88	100	92	95	94	93	85	835	92
30	University of Maryland, '05	77	80	82	90	76	84	65	78	70	702	78
*31	University of Maryland, '04	83	..	90	..	..	63	..	..	..	..	..
32	University of Maryland, '05	95	90	92	90	85	77	79	77	75	760	84
33	University of Maryland, '05	70	80	84	85	84	52	62	90	85	692	76
*34	University of Maryland, '05	..	85	28	50	59	..	54	53	..	..	..
35	Maryland Medical College, '05	43	80	32	90	66	25	86	77	67	566	62
36	Maryland Medical College, '05	38	75	10	85	81	27	84	64	63	527	58
37	University of Maryland, '05	80	90	95	90	84	73	90	88	88	768	85
38	Johns Hopkins, '05	95	100	96	100	92	90	84	88	88	833	92
‡39	Johns Hopkins	83	..	..	..	..	95	84	..	90	..	..
40	University of Maryland, '05	85	95	68	84	79	73	72	87	65	708	78
41	Maryland Medical College, '05	88	85	92	90	83	81	95	87	75	766	85
42	College of Physicians and Surgeons, '05	91	85	92	90	88	75	57	93	89	760	84
‡43	Johns Hopkins	89	..	..	..	..	79	74	..	70	..	..
‡44	Woman's Medical College	85	..	..	..	..	39	87	..	65	..	..
45	Christ's Institute, '04	33	40	12	67	36	11	40	34	21	294	32
46	Johns Hopkins, '05	93	100	91	100	93	100	97	98	80	852	94
47	Maryland Medical College, '05	75	75	43	75	68	60	63	68	90	617	68
48	University of Maryland, '05	100	95	98	90	88	85	84	93	89	822	91
49	Baltimore Medical College, '05	84	85	84	100	77	75	68	83	92	748	83
50	University of Maryland, '05	90	95	88	90	94	67	78	87	95	784	87
*51	Maryland Medical College, '04	..	..	70	..	..	48	..	..	..	..	..
52	University of Virginia, '05	81	98	91	100	90	63	88	89	75	775	86
*53	Baltimore Medical College, '00	..	..	..	75	..	37	..	..	..	..	..
54	College of Physicians and Surgeons, '05	75	90	83	100	90	95	82	79	76	760	84
55	Baltimore Medical College, '05	83	80	71	84	76	78	78	82	75	707	78
56	University of Maryland, '05	81	85	79	90	91	81	90	87	85	769	85
57	University of Maryland, '05	80	90	89	100	78	73	80	90	88	768	85
‡58	Woman's Medical College, Baltimore	91	..	..	..	..	37	86	..	75	..	..
59	University of Maryland, '05	53	85	70	80	81	73	83	90	75	690	76
60	University of Maryland, '04	50	85	15	84	70	12	70	62	65	513	57
‡61	University of Maryland	77	..	..	..	..	30	82	..	75	..	..
62	University of Maryland, '05	79	80	69	75	76	75	86	93	90	723	80
63	Woman's Medical College, '05	85	90	77	80	86	42	87	85	80	712	79
64	College of Physicians and Surgeons, '05	90	90	88	84	83	70	77	84	84	750	83
65	Maryland Medical College, '05	46	75	51	84	81	36	71	82	67	593	65
*66	Maryland Medical College, '02	65	..	77	..	75	38	..	..	..	..	..
67	Maryland Medical College, '04	75	85	67	75	75	31	88	85	70	651	72
‡68	University of Maryland	78	..	..	..	..	80	60	..	70	..	..
69	University of Louisville, '05	38	90	19	50	67	21	63	58	70	476	52
70	Johns Hopkins, '04	92	90	91	100	84	93	84	84	80	798	88
71	Baltimore Medical College, '05	44	80	46	50	71	19	65	59	50	484	53
*72	College of Physicians and Surgeons, '02	..	..	72	..	..	55	..	..	..	..	..
73	Johns Hopkins, '05	89	90	90	84	85	88	87	84	80	777	86
74	Maryland Medical College, '05	84	90	86	75	92	55	86	83	75	726	80
75	Maryland Medical College, '05	77	90	70	84	76	72	76	83	75	703	78
76	Johns Hopkins, '05	68	80	78	80	89	92	92	93	80	752	83
77	Maryland Medical College, '04	90	80	84	90	91	100	87	93	83	798	88
‡78	College of Physicians and Surgeons	68	..	..	..	..	24	84	..	66	..	..
79	University of Maryland, '05	64	80	78	84	89	76	93	88	68	720	80
‡80	College of Physicians and Surgeons	66	..	..	..	..	57	66	..	67	..	..
81	Maryland Medical College, '05	65	75	32	75	69	45	67	65	70	563	62

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Summary of Results of Examination Held by the Board of Medical Examiners of Maryland, June 21, 22, 23 and 24, 1905—(*Continued.*)

No.	College of Graduation.	Anatomy	Surgery	Pathology	Obstetrics	Practice	Chemistry	Materia Medica	Therapeutics	Physiology	Total	Average
†82	.....	..	..	..	..	..	..	..	..	..	..	..
83	College of Physicians and Surgeons, '05	75	80	75	90	81	52	62	89	87	691	76
84	College of Physicians and Surgeons, '05	83	98	85	100	80	86	95	90	80	717	88
*85	Baltimore Medical College, '03	36	40	38	75	67	32	56	42	..	..	..
86	Maryland Medical College, '05	75	85	52	75	63	45	85	84	71	635	70
87	University of Maryland, '05	77	85	68	90	87	27	69	78	75	656	72
*88	University of Maryland, '04	63	95	80	..	..	81	89	..	..	..	..
89	Baltimore Univ. of Med., '99	22	85	14	67	63	22	53	39	50	415	46
90	Johns Hopkins, '99	85	95	95	100	83	93	76	89	80	796	88
91	College of Physicians and Surgeons, '04	87	90	79	90	84	75	92	89	75	761	84
92	University of Maryland, '05	72	80	57	84	68	25	87	88	75	636	70
93	Christ's Institute, '05	19	..	5	24	11	..	32	21	8	120	13
94	Baltimore Medical College, '05	90	85	92	92	81	76	80	91	83	775	86
95	College of Physicians and Surgeons, '05	83	85	75	84	75	88	75	87	75	727	80
96	University of Maryland, '05	88	80	89	92	75	76	81	82	80	743	82
†97	.....	..	..	..	..	..	..	..	..	..	..	..
98	Maryland Medical College, '04	76	65	53	60	67	25	56	62	75	539	59
‡99	University of Maryland	82	..	..	..	..	43	64	..	83	..	..
*100	Maryland Medical College, '04	..	..	80	..	..	50	..	..	..	..	..
*101	Maryland Medical College, '04	..	..	79	..	76	75	..	85	..	..	..
102	Johns Hopkins, '05	85	90	90	95	96	80	99	97	80	812	90
*103	Baltimore Medical College, '05	..	..	75	..	..	59	..	..	..	..	..
104	University of Maryland, '05	77	80	46	92	69	53	85	84	77	663	73
105	University of Maryland, '05	85	85	89	90	79	86	98	92	94	808	89
106	Maryland Medical College, '05	79	70	56	75	75	30	84	76	75	620	68
‡107	University of Maryland	85	..	..	..	..	16	83	..	75	..	..
‡108	University of Maryland	75	..	..	..	..	52	82	..	78	..	..
109	University of Maryland, '05	86	75	73	90	76	63	81	93	80	717	78
*110	Maryland Medical College, '03	..	..	..	..	..	76	..	..	..	..	..
‡111	College of Physicians and Surgeons	80	..	..	..	..	85	88	..	76	..	..
112	University of Maryland, '05	91	70	92	95	91	95	85	90	86	795	88
‡113	University of Maryland	80	..	..	..	..	70	78	..	67	..	..
114	Maryland Medical College, '05	79	80	75	92	70	35	76	80	50	637	70
†115	.....	..	..	..	..	..	..	..	..	..	..	..
116	Baltimore Medical College, '05	70	80	76	92	81	75	90	88	75	727	80
117	University of Maryland, '05	70	85	75	92	82	26	88	89	72	629	69
118	University of Maryland, '05	95	90	91	100	81	55	76	94	90	773	85
119	University of Maryland, '05	75	85	82	92	82	89	92	86	76	759	84
120	Johns Hopkins, '05	75	85	88	75	90	93	87	97	80	770	85
121	Maryland Medical College, '05	88	90	50	84	77	48	85	81	75	678	75
122	Georgetown Medical College, '03	88	90	82	94	91	80	88	90	80	783	87
‡123	Baltimore Medical College	77	..	..	..	..	20	68	..	77	..	..
‡124	College of Physicians and Surgeons	85	..	..	..	..	78	78	..	71	..	..
*125	Maryland Medical College, '04	..	..	82	..	..	39	..	..	..	..	..
‡126	University of Maryland	88	..	..	..	..	32	90	..	87	..	..
‡127	University of Maryland	94	..	..	..	..	90	88	..	84	..	..
128	Baltimore University, '03	75	90	22	75	68	19	83	86	63	581	64
‡129	Johns Hopkins	91	..	..	..	..	78	84	..	68	..	..
‡130	Johns Hopkins	90	..	..	..	..	76	88	..	82	..	..
*131	Baltimore University, '03	50	..	67	..	75	43	..	..	..	..	..
132	Maryland Medical College, '05	54	50	74	67	70	67	64	62	63	571	63
133	Johns Hopkins, '05	67	90	85	90	96	98	84	98	89	797	88
134	Maryland Medical College, '05	72	60	64	75	68	45	86	78	76	624	69
135	Maryland Medical College	73	80	35	75	76	27	88	80	86	620	68
136	Baltimore Medical College, '05	70	80	75	95	80	46	56	88	94	684	76
137	Woman's Medical College, '05	79	85	85	100	86	55	88	90	83	751	83
138	George Washington University, '05	86	90	88	100	90	75	92	94	86	801	89
*139	George Washington University, '04	47	..	..	..	..	82	..	..	..	..	..
140	University of Maryland, '05	89	90	86	92	80	78	91	91	83	780	86
141	University of the South, '04	14	75	49	80	75	29	87	82	75	566	62
†142	University of Maryland, '04	..	..	..	..	..	..	..	..	..	..	..
*143	Baltimore University, '03	32	..	29	..	67	36	..	..	..	..	..
144	Baltimore Medical College, '01	64	60	57	67	69	51	80	75	56	579	64
*145	College of Physicians and Surgeons, '04	..	..	..	..	..	76	..	..	..	..	..
146	Baltimore Medical College, '05	60	90	87	92	77	60	78	89	80	713	79
147	Baltimore Medical College, '05	70	85	70	90	78	75	76	85	92	721	80
*148	University of Maryland, '02	..	80	60	..	82	..	..	..	..	..	..
‡149	University of Maryland	71	..	..	..	..	40	78	..	60	..	..
*150	Illinois Medical College, '02	..	..	69	..	..	60	..	..	..	..	..
*151	College of Physicians and Surgeons, '04	..	..	54	..	77	34	..	..	..	..	..
152	Maryland Medical College, '05	67	90	75	92	75	68	93	85	75	720	90
‡153	Baltimore Medical College	42	..	..	..	..	48	88	..	50	..	..

In the above summary those receiving an average of 75 were issued a license to register. Those marked with an asterisk (*)—re examination—had previously failed and were eligible to re-examination in the branches in which they had failed. If they received 75 in every branch in which re-examined, they were issued a license to register; otherwise they are again eligible to re-examination. Those marked with a double dagger (‡)—second-year student—are granted examination in anatomy, chemistry, materia medica and physiology upon completion of their second year of study. Their ratings are carried forward and made a part of the final examination.

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Report of Board of Medical Examiners of Maryland

QUESTIONS AT THE JUNE (1905) EXAMINATIONS

CHEMISTRY.

1. (a) Define atom, molecule, radical, valence; or (b) Define acids, bases, salts. Give the general properties of each, with an example. Applicant must answer either one, (a) or (b), of the questions above, but must not answer both.

2. Give formula for "hydrogen peroxide" and the reasons for its use in surgery as a disinfectant and antiseptic.

3. Describe bismuth subnitrate and explain the dark color of the stools following its therapeutic use. Name its most dangerous impurity and give test for detection of same.

4. Give formula and general physical properties of chloroform. Construct its "graphic (structural) formula," and from this show what relation it bears to the paraffin group of hydrocarbons, say marsh gas CH_4.

5. What is the chemical constitution of urea? Give approximate amount normally excreted in 24 hours and a method for its quantitative determination.

6. Give in detail a test for the detection of lactic acid in a specimen of the gastric contents.

OBSTETRICS.

1. Describe the placental circulation.

2. Give the best method of managing a shoulder presentation.

3. Give management of a normal labor in its three stages.

4. Describe anteversion and anteflexion; also retroversion and retroflexion.

5. Mention some of the uses of vaginal tampons and how they should be prepared and introduced.

6. How would you manage a case of prolapsed funis?

THERAPEUTICS.

1. Give the symptoms and treatment of lead poisoning.

2. Give the symptoms you would expect to find when an overdose of chloral hydrate had been taken, and the treatment of such a case.

3. What are the therapeutic uses of digitalis and the contraindications for its use?

4. Differentiate the coma of alcoholism, appoplexy, opium, and uremia. Give treatment of each.

5. Quinine: Indications for and mode of administration of quinine as an antiperiodic, an antipyretic, an oxytoxic. How eliminated?

6. Therapeutics of heat.

PRACTICE.

1. Define arteriosclerosis, diabetes mellitus, tenia solium, and dermatitis.

2. Give diagnosis and treatment of angina pectoris.

3. Give differential diagnosis between malarial and typhoid fevers, and treatment of each.

4. Give the symptoms of locomotor ataxia, its causes, and treatment.

5. Give differential diagnosis between scarlet fever and measles, the treatment, and sequelae of each.

6. Name the symptoms of cerebral hemorrhage.

SURGERY.

1. Give the differential diagnosis of a fracture of the neck of the humerus from a downward dislocation of the humerus, and give in detail a method of treating each condition.

2. Give the differential diagnosis between perinephritic abscess and appendicitis.

3. Give causes and symptoms of adenitis.

4. Give symptoms and treatment of dislocation of radius at elbow.

5. Describe an approved method for the removal of foreign bodies from the ear.

6. Describe an aseptic operation in any region you wish.

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PHYSIOLOGY.

1. (a) What is the composition of the saliva? (b) What is its most important function? (c) What action has atropine, pilocarpine, and nicotine upon the salivary glands and their secretion?

2. What is the difference between Pettenkofer's reaction and Gmelin's test? Describe each.

3. What is meant by diffusion and osmosis?

4. Describe the effect of strychnia on the central nervous system.

5. State what you know of the composition and physiological action of the pancreatic secretion.

6. Through what three main channels is water lost from the body? Describe the function of each.

PATHOLOGY.

1. Describe the various laboratory methods of sterilization, and explain the meaning of the term "fractional sterilization."

2. Give Koch's dicta (laws) regarding the bacterial cause of disease, and state whether these dicta (laws) are fulfilled in the following diseases: Typhoid fever, croupous pneumonia, diphtheria, measles.

3. Give Cohnheim's theory regarding the cause of tumor formation. Define sarcoma and carcinoma, and give the usual method of metastatic extension of each.

4. Describe the gross and microscopical appearance of a solitary gray or miliary tubercle. Give in detail the method of staining tubercle bacilli in the sputum.

5. Describe the autopsy findings, as regards the vascular and urinary systems, one would expect in a case of arteriosclerosis of long standing.

6. Describe what you consider the most characteristic anatomical lesion of typhoid fever, and give the chief avenues of elimination of the specific organisms from the body.

ANATOMY.

1. Describe the thoracic duct.

2. Name muscles of the eye and give their nerve supply.

3. What are the ureters and where do they begin and end?

4. Name anatomical structures severed by a circular amputation through the middle of the forearm.

5. (a) What are the divisions of the brain? (b) Name ventricles of the brain. (c) What arteries supply the membranes of the brain?

6. After a ligation of the axillary artery in its middle third, how is collateral circulation established?

MATERIA MEDICA.

1. What do you understand by the incompatibility of drugs? Give example.

2. In what particulars are opium and belladonna synergists and antagonists?

3. Name three of the principal alkaloids of opium. Give dose of each.

4. Name the official preparations of zinc, dose, and use of each.

5. What is the composition of Donovan's solution?

6. What is the source of potassium? Name four of the principal preparations, their use, and dose.

Medical Items.

TYPHOID FEVER is unusually prevalent in Maryland this year. The usual prevalence of typhoid fever is not remarked upon. A mortality of 400 cases in a year excites no interest on the part of the people. This year's tally will go beyond 400. The 4000 cases of more or less serious illness will be borne by the people of Maryland with indifference. Four cases of rabies would create a tremendous sensation. Four cases of yellow fever would spread our fame in 24 hours to San Francisco and fill our State with fear. But 4000 cases of typhoid fever will not divert a citizen's attention from the business in hand for the space of a second. Typhoid is epidemic in the United States every autumn. This year it is said to have reached epidemic proportions in many places. Washington and New York are heavy sufferers, and the daily papers have much to say on the subject. What the unusual incidence of typhoid means in each of these cities is that an epidemic two and a-half or three times as great is running along unnoticed in the neighboring rural districts. The physicians in New York are said to be negligent about reporting their cases.

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MARYLAND
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A NEW VIEW OF SLEEP.

By A. K. Bond, M.D.,
Baltimore.

WHAT is sleep? We search literature in vain for an explanation. The latest physiological treatises give no better definition than those of past generations. They discourse learnedly of blood pressure and dormant function, but tacitly confess they do not know.

Now, this inability to grasp the meaning of sleep appears to me to be due largely to our faulty point of view in considering the subject. Heretofore writers have looked upon the state of being awake as the simple primal state of animal existence and upon sleep as the strange abnormal state. This is shown by our language, for there is no suitable simple term expressive of the condition of being awake, while there are several for that of being asleep. All terms bearing upon the former state refer only to the transition from it to sleep or to the reverse transition, while for sleep there are terms in common use and terms poetical—sleep, slumber, somnolence, etc. There is no substantive word (noun) at all in common or poetic use, nor, as far as I can find by searching the dictionary formerly in use, not even, I think, in Latin or Greek, for the state of being awake. I shall, in fact, be compelled to coin a word for it in order to succinctly define my views in this paper, namely, that of "awakeness."

A FAULTY VIEWPOINT.

Scientific writers on sleep and its disorders have likewise taken the wrong point of view noticed above. Awakeness is to them an axiom of life, the natural animal state. It is taken for granted. Its wonderful phenomena receive little discussion. Why do we awake? is entirely lost in the discussion of, why do we sleep? Dreams to them seem so strange that the greater wonder of logical, reasonable thought in awakeness is quite forgotten.

How much progress would the science of optics have made if light had been considered the normal, axiomatic thing and all the energies of students had been centered on darkness? It is, how-

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ever, in light that phenomena rush and throng. So, too, in awakeness.

We laugh at the Eastern philosopher who turns his back upon life and contemplates nothingness. Yet this has been our own attitude toward awakeness and sleep.

PRIMAL SLUMBER.

I hold that sleep is merely the simpler, lower state of living existence. The human body and brain are originally built and molded in sleep. How wonderful is that formative antenatal slumber whose marvels are quickly overspread by the greater wonders of awakeness! How weird those dim constructive recesses whose depths have, even at our day, baffled in great degree the explorations of the physiologist! With closed eyelids, with heedless ears, with thoughts mayhaps as ours in dreams, the coming man is builded true to his predestined type. The softly-beating heart counts the night watches, the limbs move as ours in slumber.

And when the violence of the first great morning dawn stirs the infant to awakeness, how soon it subsides again into sleep! Hunger, which can rouse even the freezing arctic traveler to awakeness, calls the babe again and again to open-eyed activities till its need is satisfied.

Week by week the increase in number of external stimuli and the increasing sensitiveness of infant body and brain thereto lengthen the period of awakeness to one-third, to one-half, to two-thirds of the diurnal cycle. Yet even in full manhood, with what a sigh of relief at the end of our daily term of irritation and irritability we darken our chamber, close our eyes, cuddle as nearly as maybe into the old primal attitude and rest our worn tissues. Sleep, truly, needs no explanation, no excuse; sleep that "knits up the care-raveled tissue;" sleep, "that gentle thing, beloved from pole to pole," the refuge and the rest of the organism.

In its couch-shelter, made as like as possible to the primal cavern, the body repairs and refreshes itself, unless, alas! disease or unnatural irritants break its rest. Absolute prevention of sleep is said to be more quickly fatal than even absolute deprivation of food. The evils of partial sleep-prevention, termed insomnia, have never yet been fully appreciated in their bearing upon ill-health.

PLANT SLUMBER.

The realm of sleep is probably vastly more extensive than we have realized hitherto. It probably includes all plant life, all life, too, of that mysterious borderland between plant and animal organisms.

The plant has the functions which remain to us in sleep—nutrition, circulation, secretion and excretion, growth, reflex response to stimuli, etc. I might go the whole round of function and show the identity of the whole plant life with our sleeping state. The so-called opening of the flowers is, on careful analysis, no true awakening, but the mere uncovering of certain parts not essential

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to the individual's life. At best their career is but a long unwakened sleep.

AWAKENESS.

We see, then, the gradual ascent of nature—first the dull, inert mineral world, then the slumber realm of plant existence, then the animal life, born in sleep, but called by its great Designer to diurnal periods of wider function, of more intense activity.

By the apparently cruel cutting off of placental nutriment at birth it is first aroused from the long primal slumber to find itself in a new world, where tissue-food must be obtained from new and comparatively distant sources. The external senses and muscles are thus forced into action until this demand is met. At first, almost wholly in reflex response to external stimuli through the senses, motion and feeding in the babe are but little removed from slumbrous activities, quickly and naturally relapsing thereinto on removal of the stimulus. Then, as the brain and senses become more responsive and more fully prepared for their callings, locomotion and muscle action increase, food is sought at greater distances, the dim eyes of early infancy are opened, the dull ears unstopped. The brain becomes responsive to other stimuli than the primal body-crave for nutriment. Light, sound, and caress appeal even to the unhungry child.

Thought, in its higher forms, is called into exercise first by reflex excitement, but thought, in turn, begins to exert upon other brain departments that strange sway which makes it in adult life the master stimulus to awakeness, more powerful often than hunger, sound or light. Thought in its mature development can hold the weary organism back from slumber hour after hour; thought in its excessive development can even drive on the worn brain and body into hopeless wreck.

HIGHER YET.

Religion teaches us that there are yet higher conditions or developments of awakeness to which man may attain hereafter, to which some have even for brief periods awakened here; that in comparison with this higher awakeness earth's most intense life is but a slumber, with heavy eyes and dull ears, with some unused senses still steeped in their primal slumber. Strange narratives these, of light beyond the blaze of noonday sun, of voices like the thunder, of choruses swelling as the roar of many waters, of minds aflame with energy, of happiness yet unconceived of by human fancy. And science may not deny these rumors drifting down into our earthly slumber life. Is not such a tireless state, in light unshadowed, where expression may overtake concept, just what earth's brightest minds in every age have sighed for?

WHAT CAUSES AWAKENESS?

The waking of the adult human to his day's activities is an interesting process. Ultimately hunger, the great primal arouser, would cause it. In civilized life, however, we are seldom hungry, and

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sound is probably the usual disturber of our slumber. The center of hearing, wearied yesterday with the city's din, has become again attentive, and some unusual noise calls the brain into activity. Light can be but a general irritant unless some sudden increase of its intensity occurs. As the sun climbs toward the zenith the rested retina (and probably to non-luminous rays the whole brain) becomes more and more aroused, until either a noise or one of those automatic movements which sleepers make to relieve long pressure awakens us. Sometimes, doubtless, a sudden or too intense sensation, as from the digestive tract, is the awakener.

TIME LOCKS.

Among the phenomena of waking none is more mysterious than that of waking at a fixed hour determined upon before retiring to sleep. Even when this is a year-long habit the wonder of it is not lessened. There must in these brains be either a time lock or a watchman who keeps vigil all night. We are driven to the supposition that there is a higher part of man that never sleeps, a spirit that is not subject to physical waste and fret, or that this wakeful something sleeps when the rest of the brain is awake, or that it needs much briefer sleep than the rest of the brain.

We have a considerable number of facts that suggest that different portions of the body need different durations of sleep or can endure different lengths of active service without fatigue. Thus the muscular system requires more sleep than the brain, and the higher brain less than the lower. At any rate, the long repose in bed is useful rather for the refreshment of the muscles of spine and body, while a less number of these hours is demanded for mind-slumber, and the lower the type of human being (and of mind) the longer night slumber is needed. The child needs more than the adult. The inability of the lowest types of human beings to keep faithful night watches is proverbial.

GETTING UP.

If there is no sudden alarm to arouse us, we wake by sections. First the ears become attentive to sound, the eyes sensitive to light, the tissues to pressure. We turn over, bury the head under the pillow and try to shut out these disagreeable irritants. Then the memory becomes active; fancy sketches glowing and usually impracticable plans for the day. Last of all the conscience begins to stir, and with much inward remonstrance we are driven from subterfuge to subterfuge into full awakeness.

Even then the muscular system pleads for a little longer repose. In exhausted individuals of feeble vitality waking to the activities of the day is oftentimes a pathetic struggle, in which the whole energy of the character must be brought to bear. One of the delights of a holiday is that the matutinal struggle need not be made.

Physiologically, waking involves a quickening of respiration and circulation, with the hurrying of a greater blood supply to parts, as in the brain, which are to come into more intense activity.

The energy with which these changes occur determines the

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rapidity with which individuals assume full participation in the day's duties. The person with deficient lung play or nasal obstruction would be sluggish for some time after rising, as also the generally debilitated patient. There are apparently healthy persons who have never learned to breathe deeply when in quiet occupation. Morning sluggishness in these cases would suggest morning gymnastics.

DREAMS.

Dreaming is partial awakening. While certain functions or faculties remain asleep, others are stimulated into activity by the same agencies that, acting more strongly or more generally upon the organism, would cause it to wake wholly. The great unnamed faculty which controls and estimates sensations is not in action; so dreams are not limited by the restrictions of daylight thoughts. They may be, therefore, more intense than ordinary thoughts, or they may transcend the bounds of reasonableness and harmony or consistency. The imagination, as we say, has free play. Usually all relationship to existing mundane things is excluded. There may be sensations of sound and touch, but they are not interpreted as having to do with outside facts. The faculties of interpretation, control, experience, and judgment which are farthest removed from the lowly faculties of mere reflection are sleeping. We say the patient is unconscious, but he is unconscious only to external wordly things. Memory, joy, grief, fear, melody, etc., may be intensely awake.

At times the locomotive faculties are awake, as in somnambulism; at times all voluntary muscular power is in abeyance. The patient affrighted by some mental concept may think wild screams for help so perfectly that he wonders on waking that he has not roused the neighborhood, yet the centers which would formulate the muscular portion of the scream are profoundly asleep, and not a sound escapes him.

Dreams presuppose a brain unnaturally sensitive to impressions and an irritant from without or within the body. A sudden noise and an undigested meal may alike cause a dream. Sometimes the quality of the dream is clearly determined by the nature of the irritant, and may lead us to locate hitherto unsuspected disease. Thus nightmare with a monster sitting on the lower chest or epigastrium suggests either indigestion or heart disease, while a dream of strangulation suggests lung or possibly heart disorder. It may be that a thorough scientific working out of this line of research might lead to many diagnostic points of value. Pelvic irritation certainly has its special dream qualities, and it is said that epileptic irritation is sometimes indicated of the repeated experience night after night of a very clear dream concept exactly the same on each occasion. I do not know whether this latter assertion is true or not. Certainly, a dream may recur once or twice in the non-epileptic.

HYPNOTISM.

The actions of hypnotized persons in some cases have strong similarity to dream activities. So also those of hysteria patients.

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Instead of supposing a new and abnormal state of double personality and the like, it might be well to consider whether in these instances the phenomena are not due to the fact that certain faculties of the brain have gone to sleep, leaving the emotions and the imagination unlimited play. Hysterical paralysis certainly suggests kinship to the sleep state which I have illustrated by the inability to express a scream. The queer actions of the hypnotized have a strong likeness to somnambulism, and the extraordinary character studies published concerning double personality of impressionable young women may be paralleled by many dreams related in the morning by ordinary people of a poetic temperament.

INSANITY.

The actions of many of the insane even would suggest that while some of their faculties remain in the vegetative or primal slumber state, others are wide-awake. Finally, in dementia all of the higher faculties have relapsed permanently into this primal condition, even the higher traits of the non-human animal having relapsed into desuetude, and little else than plant functions remaining. They are very like to the idiots in which the complete faculties and functions of awakeness have never come into existence.

Mania is, on the other hand, strikingly similar to dreaming. Its wild activities, which seem to observers so unreasonable, are undoubtedly quite consistent with the, to us, unknown trains or fragments of thought of the maniac. The highest brain faculties, which rightly interpret sensations of touch, sight, hearing, and thought concepts, are in the maniac in abeyance, asleep, the control faculties likewise sleep, and he acts out intensely every impression that arises. The present method of treating the maniac, namely, by allowing him free expression of his thoughts and feelings, and relieving him from restraints which prevent what he believes to be the reasonable expression of his thoughts and feelings, is quite consistent with my present viewpoint. The modern therapy of mania by tonics to build good nerve tissue, by physical exercise to expel wastes, by attention to the digestive tract meets exactly the conditions which cause dreaming. The isolation from outside irritants and worries is along the same line. The depressive forms of insanity might also in their therapeutics be considered from the standpoint which I have taken.

INSOMNIA.

Two forms of insomnia may be observed. In one the body and brain are practically asleep, obtaining refreshment, but certain higher centers of consciousness are awake. The individual lies quiet, almost without active thought or with thoughts of a pleasant nature flitting to and fro, without exciting any feeling of distress or even of responsibility; in fact, he may derive great pleasure from this state.

It is a question whether this form of insomnia ordinarily does harm or requires treatment. The individual may rise in the morning refreshed if two or three hours of sleep have followed the

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insomnic period. Of course, many nights of such imperfect rest may call for medical interference.

In the second and harmful form of insomnia the sleepless brain is under distress, and even the body may not obtain its needed repose. The patient tosses and frets over his inability to sleep, or he gets into long trains of thought, which require logical ordering of a fatiguing nature or are attended by a sense of responsibility or anxiety. The brain is not playing, as in the former case, but working. The patient rises in the morning unrested, irritable, unhappy, unequal to facing his daily toil.

This form of insomnia, if protracted, is an alarming condition. In its graver instances it leads to neurasthenia and even to insanity. In its lesser degrees it undoubtedly shares in the causation of many obscure cases of nerve disorder and chronic invalidism, being often overlooked by physician and patient.

CONCLUSION.

Sleep, then, is the primal state of the human body and brain under which it was originally built into its type outlines. It is a state which is experienced in common with all plant and animal life.

From this primal sleep the body is aroused when sufficiently developed by internal and external stimuli into a state of awakeness, intense in proportion to the sensitiveness and power of its brain. Thus in the lower animal the activities of awakeness are much less extensive than in man, the brain being developed only so far as to be responsive to the lower stimuli of hunger, pain, and the like.

In man, however, to these lower incitements to activity, shared with the animals, are, as his brain becomes more powerful, added other stimuli apparently unknown to lower animals. He no longer subsides as the infant and the animal into sleep when hunger and pain are absent, but becomes liable to subjective brain sensations, intense in proportion to the sensitiveness and specialization of his brain cells. Light no longer simply warms him, but stirs him to the contemplation of its source and nature and to inventions for determining these facts. And when the external stimulus is withdrawn he is still stirred to awakeness by the intense memory of its phenomena.

And not only are external stimuli more widely and permanently exciting to his brain, but apparently the brain itself can frame from memories of past phenomena and from its own recesses (which we cannot ourselves penetrate) most extensive and stirring incentives to awakeness. Thus the sense of duty (wholly subjective apparently) wields a lash more keen and irritating even than hunger itself.

There is likewise a pleasure of activity attached to every bodily and mental function in its normal exercise which stirs us at times to longer wakefulness.

Thus, as we analyze them, all of the phenomena of awakeness fit one by one into the theory which I have adduced in the preceding pages.

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MEDICAL REPORT OF THE FIRST YEAR OF THE FRESH AIR LODGE, MT. WASHINGTON, MD.

By William J. Todd, M.D.

READ BEFORE THE BALTIMORE COUNTY MEDICAL ASSOCIATION, JULY 20, 1905.

THE following medical report of the first year of the Fresh Air Lodge of Mt. Washington, Md., is offered to show the value of medical inspection of children in schools and camps, to prevent the spread of contagious and infectious diseases.

Children, ranging from infants in arms to 13 and 14 years of age, were sent from the crowded districts of Baltimore city, to remain one week in the country, under the care of the Lodge.

The Mt. Washington Fresh Air Lodge was opened July 6, 1904, on one of the highest knolls of Mt. Washington, under the immediate direction of Mrs. John M. Carter. The building is one story, frame, placed in the center of a well-shaded grove of oaks, with a good supply of artesian well water from the Mt. Washington Water-Works Co.

As a rule, the children were exchanged each Monday morning, the residents for the week leaving before the guests for the next week came on the grounds, in this way avoiding all possible infection by contact.

No visitors were allowed to visit the Lodge until after the cultures were taken from the children's throats and a satisfactory report received from the Baltimore City Health Department. Through the kindness of Dr. William Royal Stokes of the Baltimore City Health Department, who furnished the necessary tubes and made the bacteriological examinations, this was accomplished.

A total of 110 children were cared for at the Lodge, which closed September 2, 1904.

July 12, the first "positive" was reported. This patient gave no clinical evidence of diphtheria. She was sent in the care of a competent person to her home, because there was no infectious hospital to send her to. The Baltimore City Health Department, having been notified, took charge of the patient immediately upon her arrival at her home.

On July 27 one "positive" was reported, and on August 3 two "positives" were reported. On August 5 one "positive" was reported. This girl and her sister were sent home and the Health Department was notified. It may be interesting to note that Dr. Jones, assistant health commissioner, found, acting upon my report, that a four-year-old brother of this girl had just died of diphtheria, so that she probably received the infection from her brother

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before leaving home, and not from any of the children of the Fresh Air Lodge.

August 10 one "positive" was reported, making a total of six "positives" in 110 children showing no clinical symptoms of diphtheria. These infected children might have infected their companions, causing untold trouble, had not this rule of throat inspection been carried out.

During the last two or three weeks of the Lodge the medical inspection included the examination of the children's arms for vaccination marks, disclosing the fact that 10 children had not been vaccinated satisfactorily, or had never been vaccinated. The names and addresses of these children were given to the Baltimore City Health Department.

The necessity of a hospital for infectious diseases was clearly demonstrated by my experience with the children in this camp. The infected children had to be sent to their homes in the crowded districts of the city, where their brothers and sisters might have been and perhaps were infected by them.

Not a case of illness developed in the Lodge during the summer, nor was I able to trace any infection from the children of the Lodge to those of the village.

I have to thank Drs. J. S. Bowen and I. C. Dickson for assistance rendered; also Drs. C. Hampson Jones and William Royal Stokes for their assistance and advice.

The same medical inspection is being carried out in the Lodge this year.

Current Literature.

REVIEW IN NEUROLOGY.

Under the Supervision of Robert Reuling, M.D., Baltimore.

CEREBELLAR SEIZURE (CEREBELLAR FITS), A SYNDROMA CHARACTERISTIC OF CEREBELLAR TUMORS. Charles L. Dana, M.D. *New York and Philadelphia Medical Journal,* Vol. LXXXI, No. 6.

The author calls attention to the important contributions to the symptomatology of cerebellar, or at least of posterior fossa, tumors of Dr. Fraenkel and Dr. Hunt, with special reference to the fibromata of the cerebello pontine angle. The fact that the existence of tumors in this position can often be recognized in the very early stages, that they are usually benign fibromata, at least at the beginning, and that they are often pedunculated, and could be very easily removed if they could be safely reached, has been brought out very clearly and convincingly. Dana says "the symptomatology of these 'acoustic fibromata' thus forms a distinctly new chap-

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ter in the description of tumors of the posterior fossa." The article is mainly taken up by the clinical history of the following case of cerebellar tumor:

A lady, aged 29 years, unmarried, family history negative, no illness of importance, but has had the diseases peculiar to childhood. At the age of 27 years she began to suffer from headaches and vomiting, and at the same time she noticed progressive deafness in the right ear. About six months later, the headaches having continued, she developed some diplopia, and a year from the beginning of her trouble she lost the sight of the right eye. The deafness meanwhile was steadily increasing in the right ear. At this time a physician diagnosed the case as one of cerebellar tumor. A year after onset of these symptoms the sight diminished greatly in the right eye and an ataxic gait. All this time occasionally very annoying attacks of vertigo were present, and at the end of a year were very frequent. They were the most distressing symptoms of the disease. They were described as "sudden rushes of blood to the head," during which she would feel a terrific roaring and crackling in the head, with great dizziness, so that she could not stand, and would suddenly sink to the ground, at times unconscious, but without nausea. The attack would last from five to thirty minutes. During this, the second year of her illness, they occurred every week or two, sometimes oftener—as a rule, during waking hours. As the disease progressed they became more severe, until, toward the end, they were always accompanied by loss of consciousness and a stiffening and irregular tonic spasm of the limbs, but without any actual convulsions or forced movements. There were absolutely no mental symptoms. There was no paralysis, though the right arm was slightly weaker than the left, and there was no ataxia of the arms. Both knee-jerks were about evenly, slightly exaggerated. There was no anesthesia or paresthesia. The optic atrophy in both eyes became complete. The sense of smell was lost, but this may have been so before the onset of the disease. The sense of taste was normal. The ocular movements were irregular and ataxic, but there was no distinct paralysis of ocular muscles. Towards the last there developed a paresis of the right side of the face and a slight anesthesia of the fifth nerve, with slight neuralgic pains on the same side. The patient died of exhaustion.

General convulsions do at times occur in cerebellar tumors when these are large and rapid in growth, but they are not characteristic or frequent in cerebellar disease. Changes in pulse-rate and respiration sometimes accompany the cerebellar seizures, but they also are not frequent or characteristic. But the special syndrome of cerebellar and posterior fossa tumors causing irritation and pressure is seizures characterized by:

1. Loud, high-pitched tinnitus or roaring and crackling noises, suddenly increased to great intensity.

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2. Vertigo, usually objective, and with or without forced movement.

3. A tendency to drop or fall in one direction or another instantly to the ground.

4. Sometimes sudden blindness and loss of consciousness.

5. In severe attacks tonic spasms, generally of an extensor type. This lasts from one or two to five or ten minutes.

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THE PATHOLOGY OF CEREBELLAR TUMORS. T. H. Weisenburg, M.D. *New York and Philadelphia Medical Journal,* Vol. LXXXI, No. 6.

According to statistics, tumors of the cerebellum are less frequent than of the cerebrum. Schuster, in a statistical table of some thousand cases of brain tumor found 21.6 per cent. to be cerebellar. When the relative size of the cerebellum and the cerebrum is considered it is probable that new growths are more frequent in the former. Tuberculous growths are more common in persons below the age of 20 years, while glioma, sarcoma, and cysts of various kinds are more frequent in the adult. The frequency of fibroma, especially of the acoustic nerve, is becoming better recognized. Syphilitic tumors of new growths, as carcinoma, lipoma, anglioma, psammoma, and dermoid cysts. There are very few instances in literature.

The lateral lobes, possibly on account of their greater size, seem to be more frequently the seat of tumors than the middle lobe. Growths in the anterior and posterior cerebellar peduncles are rare. The angle formed by the cerebellum, medulla and pons is a favorite seat for new growths, these tumors growing either from within or upon the acoustic, facial, or trigenimus nerves, and frequently are fibromata.

Tuberculoma.—In 152 tuberculous brain tumors collected by Allen Starr occurring in childhood 47 were in the cerebellum. In the adult they are found with equal frequency in this region and in the pons and cerebellar cortex. They are nearly always multiple and secondary to a tuberculous process elsewhere in the body. Their size varies from a small nodule to a large fist. Macroscopically, it is hard to distinguish a tuberculoma from a syphiloma. Both have poor blood supply and a tendency to ceaseate to tuberculous growth to pus formation. Again, both have a tendency to grow from the meninges.

(*To be continued.*)

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MYASTHENIA GRAVIS, WITH SPECIAL REFERENCE TO OCULAR SYMPTOMS. Mortimer Frank, M.D. *The American Journal of the Medical Sciences,* April, 1905.

The author believes myasthenia a rare disease, especially in chil-

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dren. Sex has a marked influence. The disease is most frequent in females, the greatest susceptibility ranging between 20 and 30 years. No real cause for the disease is known. Some acute infections frequently precede it, as tuberculosis or typhoid fever, etc. The onset, as a rule, is gradual. A most important symptom and an early one is ptosis. As a rule, it is unilateral at the onset, but it soon becomes bilateral, and more marked on one side than on the other. In the morning, after a night's rest, it may not be present, but may come on promptly after fatigue. It is always worse towards the end of the day or after eye-strain, such as prolonged looking in an upward direction. The occipito-frontalis muscle is so weak that it offers no compensatory action. Complete and persistent ophthalmoplegia extoma occurs without exception during some period of myasthenia gravis. The intrinsic eye muscles are, however, never paralyzed. Reaction of the pupils to light and accommodation is always normal. Very frequently the patient is unable to close the lids firmly and completely. Diplopia is often present, also strabismus. So far the pathological changes have no very satisfactory foundation. Finer changes in the nerve cells (Nissl bodies aand nucleus) will probably be found in advanced cases. Prognosis seems practically hopeless as regards recovery. In typical cases, with the presence of the myathenic reaction of degeneration, the diagnosis of the disease presents no marked difficulties, but the reverse is true in the early stages of the disease, specially in those instances where the progress is slow or the cause is atypical. As for treatment, this consists first in absolute rest, gentle massage, and measures to keep up nutrition. The author believes that the important pathologic changes will be found in the muscles or peripheral motor neurons rather than in the motor cells.

* * *

ON THE HISTOLOGICAL CHANGES OCCURRING IN UNUNITED DIVIDED NERVES. Robert Kennedy, M.D. *The British Medical Journal,* September 24, 1904.

In addition to the fragmentation and absorption of the medullary sheaths and axis cylinders which speedily ensue on severance of the nerve fibers from their connections with the centers, other changes in the fibers occur, namely, changes in the normal cellular elements of the nerve fibers, the nuclei and protoplasm situated between the sheath of Schwann and the medullary sheath. It has been long known that almost simultaneously with the destructive changes in the nerve fiber these cellular elements rapidly proliferate. Many other cells, leucocytes and connective-tissue cells, invade the nerve, but these are clearly distinguishable from the cells with elongated nuclei derived from the cells lining the sheath of Schwann. The study of the latter changes which ensue in the

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peripheral segment leaves no doubt that the chief function of this early proliferation of neurilemma cells is a regenerative one, the cells in question giving origin to new nerve fibers. Since proliferation of these cells begins at a very early date after injury to a nerve, the changes grouped under the heading of regeneration must be regarded as running concomitantly with those regarded as degenerative changes.

The changes progress rapidly up to a certain point. Certain of the changes will proceed uninterruptedly to completion; others will be influenced in their course by the existing conditions. Thus the degeneration and absorption of the myelin and axis cylinder in the entire peripheral segment and ultimate portion of the central segment, once started by the injury, will progress until there is no trace left of the old structures affected. The degenerated remains will be carried off, and many months may be required before all the old myelin has disappeared from the nerve, but the process goes steadily on.

As regards the changes in the normal cellular elements of the nerve fibers, these will progress uninterruptedly only to a certain point so long as the nerve remains ununited. Even in these unfavorable conditions, with the peripheral segment quite unconnected with the centers, these cellular elements will produce spindle cells, which unite end to end, and in this way constitute young nerve fibers. In an ununited peripheral segment after several weeks the formation of young nerve fibers reaches the highest point which can be attained under the circumstances—that is, an embryonic fiber is formed in which can be clearly demonstrated a fine axis cylinder surrounded by protoplasm in which is deposited fine drops of myelin, the entire fiber being surrounded by a delicate sheath of Schwann. At intervals along such young fibers can be seen spindle-shaped nuclei lying between the primitive medullary sheath and the young sheath of Schwann. Well-marked nodes of Ranvier can also be easily seen.

In a peripheral segment which has not been united to the central segment the series of changes only came to a stop when absorption has removed the old medullary sheaths and axis cylinders and when the cellular elements have elaborated these young nerve fibers. The regeneration part is practically completed in a few weeks, but the final removal of debris may take many months. While the separation of the segment lasts the nerve fibers never develop farther, and the characters which I have given for the young nerve fibers represent a resting stage, and in this condition they apparently remain for very long periods. He examined ununited peripheral segments up to 18 months from the date of division, and found the histological characters the same as regards young nerve fibers.

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The nerve fibers are therefore of small size and imperfect development, although all the parts are represented, but the small size and difficulty of staining and the compact way in which they packed together make it very difficult to recognize them as nerve fibers. If, however, very fine sections are cut from nerves embedded properly in paraffin, and if these are successfully stained by Stroebe's method, no doubt can be entertained as to the structures in question being nerve fibers. Vanlair divides degeneration into several stages, the final of which he calls atrophic degeneration.

Recently Mott, Halliburton, and Edmunds have investigated the subject of regeneration of nerves, and as a result of the observations adhere to the view that the regenerated fibers are derived entirely by growths from the central end. Mott, Halliburton, and Edmunds seem to lay great stress on the presence of excitability and conductivity as a proof that a given distal segment contains young nerve fibers. The author does not think that these should necessarily be present at all, though the distal segment is liberally supplied with young nerve fibers. Excitability and conductivity are properties of nerve fibers, but not necessarily of immature nerve fibers.

* * *

EXPERIMENTS ON INOCULATIONS OF APES WITH SYPHILIS. A. Neisser. *Bull. de L'Institut Pasteur,* Vol. II, No. 22.

After reviewing the experiments of Metchnikoff and Roux in some detail, the author gives the result of his own experiments in the inoculation of syphilitic virus. In seven apes, *Macacus rheus,* he was not able to show the least lesion. The inoculated products were obtained from primary and secondary syphilis. With the *Macacus speciosus* Neisser had a little better results. In two cases, at the seat of inoculation, there was an infiltration which resembled very much a syphilitic nature. Neisser was not able at this time to make control inoculations. The experiments upon chimpanzees were made to establish the receptivity or non-receptivity with syphilitic virus. Unfortunately, most of the experiments (nine chimpanzees) were made in such a fashion that it is very difficult to draw any very definite conclusions. One chimpanzee received during six months 257 c. c. of serum under the skin without showing the least symptoms of syphilis. After the last injection of serum he was inoculated with some virus coming from the mucous patches of a tonsil. This time the inoculation was positive. The animal developed a chancre, polyadenitis, and papules—in short, all the symptoms of syphilis similar to that shown by Metchnikoff and Roux.

From this experiment the author concludes that the serum from a syphilitic person does not confer immunity to a chimpanzee even when injected in very large quantities.

Reinoculation of this animal six weeks after the first inoculation of syphilis had no effect.

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ALEXIUS MCGLANNAN, M.D. HENRY O. REIK, M.D. JOHN RUHRAH, M.D.

Secretaries of the County Societies are earnestly requested to send reports of meetings and all items of personal mention and of local or general interest for publication addressed to Dr. Alexius McGlannan, 847 North Eutaw Street, Baltimore.

THE COUNTY SOCIETY is the essential nucleus and vital center of our medical organization. In the excitement of largely-attended meetings of national and State societies, with varied programs of fine quality, one is likely to be carried away by the force of mere numbers, and in the glamor of the excellence of conditions displayed decide that organization is perfect and strong, forgetting that the size of such meetings indicates only a fungus, unsubstantial growth unless rooted in a collection of vigorous, well-organized county societies, holding regular, attractive, well-attended meetings.

The Maryland State Society is justly famed for the quality of its meetings, and the attendance is usually good, but most of our county societies are prone to lassitude. There is no excuse for the wide difference of condition now existing between the county societies. While none of our county meetings are in any way equal to those of some other localities, one or two show some degree of virility and are examples of the effect of judicious industry. For the others we look to their officers for an improvement of conditions. Theirs is the duty of nursing these marantic bodies into vigorous organization. A little, very little, exertion by the president will arrange an interesting program, and a report by the secretary will secure the publication of the proceedings of the meeting. A timely discussion of items of local interest will always stimulate attendance. At present the inertia of many officers is rapidly begetting a fatal apathy among the members. Work is the only protection from destruction, and the work must be performed by the

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local men. The State society and national association are ever ready and willing to exert all their power in aid of organization, but the real vivifying impulse must come from within, must be given by the officers and members of the county societies. Let everyone, therefore, endeavor to do his share of the work—the officers in arranging, the members in attending meetings, all uniting in peace and concord for mutual improvement, encouragement, and protection.

PHYSIOLOGICAL BASIS AND CLINICAL EFFECTS OF HYDROTHERAPY IN CHRONIC DISORDERS.

By Simon Baruch, M.D.,
New York.

READ BY INVITATION AT THE ANNUAL MEETING OF THE MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND, 1905.

THE management of chronic diseases is the most difficult task of the physician. The chief reason for this unfortunate condition is to be found in the long-established but fallacious reliance on medicinal agents which have been more or less vaunted for the cure of these disorders. I am free to confess that I labored for 20 years under the idea that medicinal agents are valuable remedies in chronic diseases. Like other fallacies imbibed in early medical life, this *ignis fatuus* was extinguished by the failures and disappointments of clinical observation. The latter has convinced me that, with the exception of quinine in true malarial diseases and mercury and iodide of potassium in true specific diseases, we obtain only palliative effects from medicinal agents in chronic disorders. Our chief reliance must remain for the present on those natural agents which in health maintain life, viz., air, water, food, muscular activity, rest, clothing, etc. Today it is a recognized fact that, aside from congenital diseases, the large proportion of chronic disorders are traceable to the abuse or neglect of these life-sustaining or physiological agents, or to the presence of toxic agents which would in many cases have been neutralized by the maintenance of resisting capacity through better attention to proper food and drink, exercise and rest, regular sleep, hygienic environment, bathing, etc. It is not my intention to enlarge upon the etiology of chronic diseases—this is a vast subject—but merely to advert to the all-important fact which clinical observation of nearly half a century has drilled into my mind, and doubtless finds response in yours also, that by removal of the etiological factors referred to we can accomplish far more than by a resort to drugs. Every progressive physician must assent to this proposition, and is guided more or less by it. And yet our results in the treatment of these diseases are not flattering. Still the neurasthenic, the rheumatic,

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the gouty, the diabetic, the dyspeptic, and other patients come and go; they wander from one doctor's office to another until, discouraged, they seek advice from quacks, osteopaths, hydropaths, psychopaths, Christian and unchristian scientists, *e. i. o. g.* Why is this? The answer is plain. The average physician does not regard a chronic case with the same serious interest which governs him at the bedside of an acute and severe threatening malady; the danger seems distant and the result doubtful. He is imbued with a skepticism born of frequent defeat, and fails often on this account to imbue the patient with that great tonic effect arising from hope and confidence which the quack or Christian Scientist feels or claims to feel. Thus the physician is handicapped at the outset and is led into a routine of treatment which, as a rule, is not vigorously conducted.

Compare the attitude of the physician in the management of pneumonia with that assumed generally in the treatment of a case of neurasthenia. In the former the entire household is laid under contribution; every member is ready and anxious to make sacrifices to aid the doctor in his contest with the invader; trained nurses are summoned, when obtainable, to observe and record the changes and fluctuations which furnish us with reliable data for the conduct of the entire case.

In the case of neurasthenia, on the contrary, the patient is not under control; he is moved by his own whims and fancies to obey or neglect directions; he is seen at stated or more frequently at irregular intervals, and the record of the case is made up chiefly from his own statements and impressions. There is no precision nor method possible under such conditions.

I plead for a more systematic management of all chronic cases, and would urge the insistence upon precision in the prescription, of the treatment, and in its execution by the patient. Such a course would change our attitude and consequently our results. These preliminary observations may, I trust, not be regarded as irrelevant. I shall show that they apply with equal force to the subject of this paper. They have become so much part of my medical self, by reason of their truth and import to both physician and patient, that it seems an imperative duty to utilize every occasion of this nature for their propaganda. Much progress in this direction has been made in the more exact prescription of *some* of these physiologic agents.

Air is now prescribed in a less haphazard fashion than in the earlier years of my medical life. At that time ventilation of the sickroom was often referred to in books and lectures and sometimes insisted upon in acute cases, but rarely was it added to the doctor's prescription in chronic cases. Change of air and climate were often recommended, but not until recent years has a careful study been made of the real advantages and contraindications of climate. Forty years ago the Riviera, Algiers, and other southern resorts were the chief climates prescribed; in this country Florida and other southern sections. To send a phthisical patient

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to Davos or to the Adirondacks would have been regarded as almost homicidal. A careful weighing of clinical results has brought order out of chaos in that it is now clear that while thermometric and barometric conditions are elements to be considered in the prescription of climate, in phthisis for instance, the most important condition of this air treatment is purity and comparative dryness and the almost constant exposure of the patient to the influence of this remedial agent night and day. Unremitting attention to this chief yet simple element of the air treatment has added vastly to the removal of pulmonary phthisis from the category of incurable diseases. The same is, as you are aware, true of the more exact and systematic application of diet, exercise, rest, etc.

The fact that a successful management of so intractable a disease as phthisis has resulted from the methodical application of these physiologic remedies has led me to study the reasons why that other great physiologic remedy—water—has not been adopted by the profession in the management of this and other chronic disorders. In phthisis hydriatic procedures have been successfully used by Brehmer, Dettweiler, Roempler, and others. Long before I witnessed its application at these institutions (1896) I used hydrotherapy with satisfactory results in the Montefiore Home. Before the New York State Medical Association I reported the striking results of this treatment in 1893.

During the past 10 years it has become clear that the main causes of the neglect of this valuable therapeutic agent are:

1. The absence of instruction on this subject in the medical schools. In most of these the most superficial and, I regret to say, incorrect reference is made of the uses of water in chronic diseases, while its application in acute diseases is dismissed with a brief allusion to cold baths in fevers.

2. As a result of this neglect the most astounding errors in the technique or method prescribed are committed, as I shall show.

3. The lack of precise knowledge of the action and clinical effects of water has resulted in the relegation of its use to nurses and even to empirics. The unhappy effect of this error is evident in Germany, and recently also in this country, in the rise of that class of quacks which has assumed the high-sounding title of nature-doctor. These people have shrewdly appropriated the physiologic remedies above referred to; they inculcate a contempt for medicines and doctors, and have succeeded in making such inroads upon the legitimate domain of practice that they are regarded in Germany as a serious menace to the educated practitioner. In this country we are wont to treat these people with haughty contempt, just as the German doctors did formerly. The same results are observed in the rise of the osteopaths, hydropaths, and their ilk.

These serious consequences may be counteracted only by a concerted effort on the part of the medical schools to teach the action and therapeutic uses of physiologic remedies, especially of hydrotherapy, just as they teach these in connection with medicinal agents. It is claimed that the medical curriculum is already over-

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crowded. I answer that a little judicious pruning of the course in materia medica would leave ample time and opportunity for instruction in this neglected and, as I propose to show, more valuable remedial agent. Let me cite as an example one of the most recent and concise textbooks on therapeutics. Four pages are devoted to the study of antimony, despite the fact that the author correctly states that "indications for it are not so generally recognized as formerly;" arsenic receives six pages; asafetida, one page; calcium, three pages; camphor, three pages; capsicum, two pages; conium, one and a-half pages; iron, with its 35 preparations, seven and a-half pages. Allium, chimaphila, chireta, cimicifuga, hematoxylin, and other medicines, happily now out of vogue, occupy valuable space in this excellent epitome of materia medica. To the application of water in *chronic diseases* one page (half of which is occupied by an excellent illustration, but incorrect description of the drip sheet) is given.

Fifteen years ago I made a plea for this idea in the New York Academy of Medicine. On this occasion the lamented Loomis—this eminently practical clinician—said (and these are his own words): "We all use less medicine as we grow older." In reply I expressed the hope and prayer that teachers like Dr. Loomis would save the student the loss of time that could be devoted much more profitably to physiologic therapy and preclude thus the necessity of casting aside in after life as needless ballast the knowledge acquired in his earlier years at the expense of much time and trouble. Need I enlarge upon the crying need of instruction on this subject in our medical colleges?

Moved by the revelation of the therapeutic value of water derived from a large clinical experience in private and hospital work, it has for many years been my self-imposed mission to remove as far as lay in me the difficulties that stood in the way of a more general use of hydrotherapy. In this effort to add to the therapeutic armamentarium one great and encouraging fact constantly stood out—*the action of water as a remedial agent has a positive scientific basis;* it rests upon recognized principles of anatomy and physiology. These are so trite that every educated physician is thoroughly familiar with them. You will pardon me, therefore, for adverting to these basic principles in order to convince you that this agent is not empirical, as it seems to be regarded by the majority of the profession.

No remedial agent is entitled to confidence unless its action has a rational basis, unless it may be administered in proper dosage and its clinical results are convincing.

Before this enlightened audience it will suffice to glance cursorily at the *rationale* of the action of water in health and disease.

In the first place, let it be understood that this action depends not so much on the water itself as upon the *temperature* conveyed by it. When it is applied to the skin (and this is the most frequent method) the resultant effects are due to the heat or cold as thermic irritants chiefly and to the water only as a mechanical medium and

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irritant. You will readily recognize how flexible this agent is when attention is called to the fact that it may be applied in the liquid, solid, and vaporized form, and that there are many technical procedures which enable us to vary its effects. These facts enable us to subject water to exact and varied dosage by increasing or decreasing the temperature, duration and pressure, and also by the changes in the mode of procedure.

Two salient facts must be recognized—(1) that positive effects are elicited by the mechanical and thermic excitation of the skin; (2) that the skin is an important organ permeated by nerves and blood vessels at every point, and that the latter are but the outlying districts of the life-controlling nervous and circulatory systems. That we may influence the latter by stimulating or depressing the former is a fact known even to the tyro in medicine. Does a shadow of doubt linger in the mind of anyone with regard to the clinical application of these anatomical and physiological facts? Let a concrete and familiar example remove it. Look at that most pathetic and interesting example of asthenia, of feeble life—the stillborn infant. Do we administer any of the well-known nerve or heart stimulants hypodermically or otherwise to arouse the flickering spark of life? No; we resort to the thermic and mechanical irritation of the skin to meet this great emergency at the dawn of existence. Cold water is dashed upon the infant, in small dose (sprinkling) at first, in larger dose (by affusion) if needed, and in still larger dose (by dipping the entire body) if the milder applications fail. The result is happily familiar to us all—there is a gasp, a deep inspiration follows, the fluttering, feeble heart feels the impulse, the pallid face assumes a ruddy hue; in short, this simple hydriatic procedure has set the clogged wheels of life in motion. We stand in the presence of a great therapeutic triumph, the like of which the physician encounters but too rarely. Need I advert to the *rationale* of this marvel? Is it not undeniable that the excitation of the network of sensory terminals has been conveyed, as is the physiologic law, to the central nervous system, and that through reflex effects impulses have been sent to the lungs and the heart, which have restored this puny weakling? Here stands a plain and simple clinical demonstration of the *rationale* as well as of the capacity for dosage of water; here is the alpha and omega of hydrotherapy. There is no need for further detail of its physiologic basis before this audience. How does it apply in chronic diseases?

The therapeutic indications in the latter are (1) to restore defective or irregular tissue change; (2) to enhance nutrition and hematosis; (3) to eliminate products of faulty tissue change and toxic material which menace the functions slowly but surely. Let me urge that the same study of climate, food, etc., which have brought such signal success in th management of that once incurable disease—phthisis pulmonalis—be applied also to the adaptation of water in this and other chronic disorders. Do you read with avidity essays and works upon the dietetic and hygienic, the

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so-called open-air treatment of phthisis? Do you welcome every new fact brought forward because you are convinced that thereby you arm yourself against this dread foe, whom sooner or later you may be called upon to encounter? Do you scan with deepest concern articles and discussions on the treatment of gout, rheumatism, diabetes, neurasthenia because they are the bane of your professional lives, and you would fain be prepared to succeed in overcoming them? Let me urge you to go and do likewise with regard to hydrotherapy. Study its principles, its *rationale,* its flexible methods of application, and mark well its clinical results, vouched for, as I shall show, not by enthusiasts, but by eminent clinicians. There will be revealed to you, as was unexpectedly revealed to me, a mine of therapeutic possibilities that will render the management of chronic diseases far more satisfactory, lighten your responsibilities, and bring joy to many households. There is now no lack of works on this subject in our own language, practical works in which everything pertaining to this subject is set forth plainly, so that "he who runs may read." The technique which appears to the uninitiated so complicated is clearly described and fully illustrated, and really demands less skill than the technique of electricity, which most physicians use with facility. In the brief time at my disposal it is impossible to offer more than a mere outline.

Just as in the application of any other remedy, a clear conception of the therapeutic indications and of the action of the remedy are the main guides to the correct use of water in chronic disease.

That the effects of the external and chief application of water in chronic disorders depend upon the irritant action of this agent upon the cutaneous nerves and vessels is clear enough, but the method to be adopted in each concrete example must be learned from observation, as is true of the use of diet, exercise, rest, electricity, and even of medicinal agents, the simplicity of whose application renders them a favored resource. It is so easy to write a prescription for iodide of potash or colchicum or aspirin or colchesal or other new-fangled remedy for gout and rheumatism; so convenient to prescribe glycophosphates, phosphagon or some other new and often unpronounceable nerve upbuilder in neurasthenia. The polite agents and sample distributors of the new school of drug manufacturers offer such facile therapeusis that even medical human nature often succumbs to the allurement rather than reason out and clearly prescribe the more complicated but well-tried physiologic remedies. Is it not a fact that many of us have printed diet lists for each disease, which the patient is instructed to follow? And yet we know well that precision in the quantity, mode of preparation and time, frequency, etc., are as important as is the selection of food. Wherein does the marvelous success of the Weir-Mitchell rest-cure lie? Chiefly in methodical, precise, and unremitting administration of the physiologic agents which all physicians have prescribed in a less precise manner for a long time. Instead of directing the patient to adhere to a diet list, for instance, we place a nurse in charge under conditions which enable her to

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control his fancies and whims in regard to diet, massage, bathing, and other remedies.

The facile therapy of chronic diseases must be abandoned, and in the use of no remedy does this apply with more force than in the application of water. It does not suffice to direct the patient to take a warm bath or a cold sponge or a Turkish bath. Full and explicit directions must be given as to the time, the temperature, the duration of the bath, the temperature of the bathroom, the patient's conduct before and after it. Take the case of an anemic neurasthenic. When water treatment is prescribed at all it is too often limited to advising a daily cold sponge. To obtain the tonic effect of sponging, reaction must be induced by it. This may be attained only by a correct adaptation of the method to each individual. Hence precise directions are required for the patient's guidance. It is always a safe rule to order the treatment immediately after rising, because the cutaneous vessels and nerves are better prepared for response by the warmth of the bed. The bathroom should be of not less temperature than 70° F.—warmer if possible—to prevent chilling, which always precludes reaction. The patient should stand in a tub containing 12 inches of water at 100° F. Begin with water at 90° F. Into a basinful of the latter a coarse washcloth is dipped, and with this the trunk is rapidly rubbed and washed, treating small portions at a time, and redipping the cloth frequently until the entire body with the exception of the extremities has been treated. The omission of the forearms and legs prevents chilling. Cold water should *never* be applied without friction. Chilling below the skin temperature, which averages 90° F., is thus avoided and reaction promoted. After treatment the patient should step upon a bath towel or warm rug and be dried with friction. Each day the water temperature may be diminished five degrees or less, always having strict regard for the reaction following the previous treatment. If the reaction is feeble, *i. e.*, if the patient feels chilly, it is not good practice to raise the water temperature; it is better to more thoroughly wring the washcloth, or better still to treat a portion only of the trunk each time until reaction is assured. By this method less heat is abstracted, and therefore reaction is promoted. This course should be pursued until a water temperature of 60° F. is reached. Now the patient may receive affusions, beginning again with water at 90° F., which is poured from a large dipper or basin upon the back, the patient standing in water at 100° F.; then the chest receives the same affusion, and the patient is dried and rubbed as previously described. Having reached a water temperature of 60° F. by daily reduction, and each treatment having been followed by satisfactory reaction, the patient is ready for the morning dip into water at 90° F., daily lowered until the lowest temperature that is followed by good reaction is reached. This cold dip must never be prolonged into a bath, because it makes greater demand upon reactive capacity than any other procedure. This home treatment requires no nurse—only a fairly intelligent mother or ordinary attendant.

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What is the *rationale* of this apparently simple hydriatic procedure? You perceive that it is merely an adaptation of the principle of peripheral excitation of the nerve and vessel terminals to the feeble reactive capacity of the individual. If a cold sponge bath had been ordered without the seemingly needless directions here described, the water temperature used would have been in this city 45° F. in midwinter and 70° F. in midsummer, provided that the attendant would have executed the prescription conscientiously. This is not in human nature, however. The temperature would surely have been raised to satisfy the patient. The result would have been simply a cleansing bath without reaction, and therefore without therapeutic effect.

After a series of systematic procedures, on the contrary, each producing reaction, a daily neurovascular stimulation is inaugurated which refreshes the central nervous system, dilates the cutaneous vessels, deepens the inspiration—in short, produces that therapeutic result which is summed up in the term *tonic*. All these effects are the outcome of reaction after cold procedures. This physiological process is inaugurated by the effort of the organism to counteract the invasion of cold and re-establish the previous *status quo*. In accordance with, or rather in proportion to, the disturbance of the system is the response of the latter for its defense. *This is a trite physiological principle.* It is a well-known fact also that mild excitation stimulates and that intense excitation depresses. Applying this principle to excitation of the nerves and vessels of the skin by cold, we find that brief application produces a redness, showing a tonic dilation of the arterioles, also a stimulating effect on the central nervous system, which is manifested by refreshment, as in the familiar case of the stillborn infant. A more intense application of cold produces congestion of the skin, as may be readily observed after prolonged application of ice. And, true to the laws of physiology, if the ice is not withdrawn, the vitality of the skin would be destroyed—frostbite would result. Again recurring to the stillborn infant, if, instead of a mere dip into cold water, it received a full bath of several minutes, it goes without saying that the effect would be *collapse*. It is evident that adaptation to the concrete case (dosage) is based on physiologic principles. Moreover, the vasomotor system is under control of the excitants or irritants applied at its distal end—the skin—through its sensory terminals and arterioles. The latter stand under the direct influence of the vasomotor center in the medulla. When this center is excited to reflex efforts the peripheral vessels contract; this, too, in proportion to the intensity of the excitation. It is a recognized fact that the vasomotor system maintains the tonus of the vessels, upon which the elastic resistance at the periphery depends, and which, in turn, regulates cardiac activity and blood-pressure.

That the circulation may be positively influenced by irritants applied at the periphery has been again and again demonstrated,

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and that the excitant action of cold and heat is similar in effect to that of other irritants has also been clearly proven.

The excitation induced by chemical, mechanical, or thermic irritants differs only in degree. In hydrotherapy we are concerned only with the latter two. Besides the reflex effects, there is another no less potent influence exerted upon the heart and larger vessels by the local effect of cold water upon the cutaneous arterioles. The latter are contracted primarily, and when the blood returns after the withdrawal of the cold water it fills the vessels to repletion. Redness of the skin, which is notable after a good cold hydriatic procedure, testifies to this fact. It should be borne in mind, however, that this is not a passive congestion, as is that following a long-continued application, after which the skin appears of a purple or cyanotic hue. The latter is accompanied by coldness, the former by warmth. Hence the proper reactive dilatation of the cutaneous arterioles is correctly regarded as a tonic dilatation which enhances the peripheral elastic resistance, and thus increases ventricular action, improves the radial pulse, and thus drives the blood into all parts of the system with a vigor which in chronic diseases involving the nutrition must inure to the benefit of the entire organism. My own observations have confirmed the statement of Winternitz and others that after an active cold hydriatic procedure which has produced a good reaction there is a decided fluxion, evidenced by an increase of white and red cells in parts that have not been subjected to treatment, as the lobe of the ear or the finger tips, amounting often to 20 per cent., and continuing for several hours in a lesser degree.

Without entering into further detail, it may be stated that the mechanical and thermic stimulation of that vast network of nerves and vessels which ramifies through the skin impresses such changes on the caliber of the vessels, the action of the heart and the distribution of the blood that all the organs must share in the improved circulation. The result must involve restoration of glandular activity and removal of defective nutrition, and enhancement of elimination of toxic products, which constitute the chief lethal factors in chronic disorders. That this is true my own observation has abundantly demonstrated. Lest, however, I be charged with unwarranted enthusiasm, let me remind you that I am not a hydrotherapeutist, but a physician devoted, like yourselves, to private and hospital practice, and that I was drawn to the study and utilization of hydrotherapy by the study of the *history* of medicine, in which I became interested about 15 years ago, and which revealed the surprising fact that in all eras of medicine the advocates of water as a therapeutic agent were among the most eminent men of their respective times. I need mention only a few as examples. Hippocrates wrote a treatise on water and displayed a marvelous therapeutic wisdom in the aphorism, "Cold water warms (stimulates) and warm water cools (soothes)." If the average doctor of this enlightened era would heed this wise and absolute truth of hydrotherapy, the cold bath would no longer be prescribed to re-

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duce temperature in fever, but to stimulate the heart and nervous system, and the anemic or otherwise depreciated patient suffering from chronic disease would no longer be deprived of its refreshing and tonic effect. Asclepiades, the physician of Cicero; Celsus, the physician of Ovid, and Fabius Maximus, and Antonius Musa, who cured the Emperor Augustus and the poet Horace with cold water (see the first lines of the sixth epistle of Horace)—these were energetic hydrotherapists. Paulus Aeginaeta treated sunstroke more skilfully than is done in many hospitals today. He did not use ice baths to reduce temperature, but applied cold affusions to stimulate the depressed patient. The correctness of his view and the erroneousness of the modern practice was strikingly illustrated in the New York hospitals in 1896.*

Van der Heyden, Fr. Hoffmann Hahn, Hufland, and, in modern times, Niemeyer, Semmola, Strumpell, Nothnagel, Ziemmssen, Kussmaul, Dujardin-Beaumetz are familiar clinicians who advocated hydrotherapy. In his excellent work on tabes (Volkmann, 1896), Erb writes of "the undeniable influence of the water treatment upon tissue change, nutrition, and body weight upon the energy of the heart, and the general increase of strength and working capacity."

Senator states (*Zeitschrift für Praktische Aertzte,* 1898) that the excitation of the cutaneous nerve terminals is physiologically the most efficient element of hydrotherapy in tabes."

Strumpell (*Münchner med. Wochenschrift,* 1898) writes: "In the symptomatic treatment of tabes these methods are certainly indispensable."

Bear in mind that these are views upon the value of water treatment in an incurable disease which baffles our best efforts at palliation. Semmola (lectures on therapeutics in the Naples University) wrote: "Hydrotherapy excites cutaneous activity, and with it all functions affecting tissue change and organic purification, so that often real marvels of restoration in severe and desperate cases have been obtained by it."

Erb (*"Gesunde und kranke Nerven"*) writes: "In the management of neurasthenia the water treatment is of the greatest value."

Even Collins ("The Treatment of Nervous Diseases"), who inveighs in characteristic, unmeasured terms against "hydriatists, lay and medical," writes: "Cold water is the most potent agency to stimulate the circulation and to facilitate metabolic changes. It promotes the appetite, facilitates digestion, and overcomes myesthenia."

The late Prof. W. H. Draper (*Medical Record,* April 22, 1893) stated: "In persons whose nutrition has been enfeebled by chronic diseases, neurasthenia, and hysteria its good effects are very striking. It seems to be more effective than medicine."

These brief excerpts from the works of eminent clinicians who

*"The Principles and Practice of Hydrotherapy." By Simon Baruch, M.D. Second edition. "Insolation." New York: William Wood & Co.

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have evidently subjected hydrotherapy to the crucial test of exact clinical observation strikingly confirm my own observations during the past 15 years in private and hospital practice.

As an institution which receives only chronic diseases may demonstrate the clinical value of hydrotherapy, I submit to you a summary from the annual report of the Riverside Association, a philanthropic society which combines with settlement work a hydriatic department. The latter, instituted in 1895, treats with water cases referred to it for that purpose by the outdoor departments of the largest hospitals and by the dispensaries of the largest medical schools in New York city. When it is remembered that only cases which have proved obdurate to other treatment are thus referred, it must be accepted as a demonstration of the actual value of hydrotherapy, that the reports show a steady increase of patients amounting to 500 per cent. The number of treatments given in 1895 was 2000, while the number in 1904 was 10,000. The diseases treated were neurasthenia, chronic rheumatism and gout, neuritis, chlorosis, bronchitis, lumbago, sciatica, hysteria, locomotor ataxia, and some other organic diseases.

There are many technical points which require attention. Did time permit I should like to dwell upon them, and shall do so with pleasure later if you so desire. These may be readily learned by practicing the technique described in special works on hydrotherapy. Let me warn you, however, not to be guided by the ordinary works on therapeutics or on nervous diseases. Two examples may serve to impress this warning. Among the most useful procedures, that for home treatment is the "drip sheet." An otherwise excellent textbook on therapeutics gives the following faulty description of the drip sheet, which I reproduce only in order to warn you how not to do it and to advert to the reasons of the latter: "The nurse takes a linen sheet, previously wrung out of water, at any temperature that is not too low for reaction, and throws it around the patient's figure and over the head, so that in a moment the entire surface is in contact with it. Then the nurse applies brisk friction to the back of the patient's body and limbs, while the latter rubs the front of the body with his own hands." The first error in this technique is that the sheet is directed to be wrung out. Do you not see that the term "drip sheet" is thus falsified, for how can the sheet drip if it be wrung out? Another obvious error is that the patient is to "rub himself with his own hands in front." How is this possible if he is entirely enveloped in the wet sheet? Pray do not regard me as hypercritical or desirous to split hairs about trifling differences in technique. No; the object of the drip sheet is the rapid abstraction of heat from the skin and consequent shock (so called); the greater the latter the greater the reaction. If the sheet is wrung out, less heat is abstracted; less reaction is obtained. This is the cold rub (*kalte Abreibung*) of the Germans, in which the patient is rubbed by the attendant *with* the damp sheet over the entire body. It is very useful in feeble patients who cannot bear the sudden and energetic action of the drip sheet. It has its special

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uses, therefore, as a preparation for the drip sheet. Moreover, an important part of the technique of the drip sheet is entirely omitted in this excellent work on therapeutics, viz., the *affusion,* which should be executed as follows: After the patient has been rubbed by rapid passes of the flat hand over the wet and snugly-fitting sheet until the latter feels warm, water at a temperature five degrees lower than that used for the sheet is dipped from a vessel previously prepared for that purpose and poured from the dipper or basin upon the upper back. This is rubbed and slapped until it warms again. Successive parts of the back and front of the trunk are similarly treated until the latter has been thoroughly cooled and rewarmed over its entire surface. This is really the most effective element of the drip sheet, for this stimulation by alternaate dilatation and contraction of the cutaneous arterioles results in positive effects which would be sacrificed in the imperfect method described in this and other textbooks.

In a recent German work (Oppenheim on Nervous Diseases), whose excellence is testified to by translation into English, the author commits the perhaps pardonable error of assuming a knowledge of the technique of hydrotherapy on the part of the reader, who encounters the following passage on p. 767: "Wet packs over the entire body, Priessnitz bandages around the abdomen, feet, etc., may produce sleep." The reader is not only disappointed, but he is tantalized by the further statement that "the beneficial effect of hydrotherapy in inducing sleep should be universally recognized." In stating the application of medicinal agents, electricity, etc., this author gives definite directions, leaving not the slightest doubt regarding his methods of administration. How much more useful would be such directions on the technique of the hydriatic procedures he recommends!

These citations might be multiplied to show that most works on materia medica and therapeutics, and even special treatises on nervous diseases, should be avoided as guides to the technique of hydrotherapy. Let me admonish those of you who are teachers of medicine to use your influence to diminish the time allotted to instruction in the actual materia medica, and to devote more attention to physical remedies, especially hydrotherapy, which is still greatly neglected. It would be also a profitable enterprise to have nurses and the house staffs of hospitals instructed by competent persons and from reliable textbooks in the technique of hydrotherapy. Until this has been done it is better to omit this valuable therapeutic measure in cases which do not yield to mild measures, or to refer to institutions which have added hydrotherapy to their armamentarium.

For the utilization of the more energetic procedures—douches, etc.—the water pressure in private dwellings and the arrangements for regulating the temperature and pressure and duration, very important details, as you have doubtless gathered, are totally inadequate. Their use would surely lead to disappointment and damage not only to the patient, but the repute of hydrotherapy.

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In conclusion, permit me to express my high appreciation of the privilege of appearing by invitation before this assemblage of progressive physicians of Maryland, and to indulge the hope that the brief exposition of hydrotherapy you have listened to may incite you to a desire for larger knowledge of a remedial agent which has afforded me great comfort and satisfaction during an active medical practice.

UNITY, PEACE AND CONCORD.

By William Osler, M.D.,

Regius Professor of Medicine, Oxford University, Oxford, England.

A FAREWELL ADDRESS TO THE MEDICAL AND CHIRURGICAL FACULTY AND TO THE MEDICAL PROFESSION OF THE UNITED STATES, DELIVERED AT THE ANNUAL MEETING OF THE MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND, BALTIMORE, APRIL 26, 1905.

ON this occasion I have had no difficulty in selecting a subject on which to address you. Surely the hour is not for the head, but for the heart, out of the abundance of which I may be able to express, however feebly, my gratitude for the many kindnesses I have received from the profession of this country during the past 21 years, and from you, my dear colleagues of this State and city, during the 16 years I have dwelt among you. Truly I can say that I have lived my life in our beloved profession—perhaps too much. But whatever success I have had has come directly through it, and my devotion is only natural. Few men have had more from their colleagues than has fallen to my lot. As an untried young man my appointment at McGill College came directly through friends in the faculty who had confidence in me as a student. In the 10 happy years I lived in Montreal I saw but few physicians and students, among whom I was satisfied to work—and to play. In Philadelphia the hospitals and the societies absorbed the greater part of my time, and I lived the peaceful life of a student with students. An ever-widening circle of friends in the profession brought me into closer contact with the public, but I have never departed from my ambition to be first of all a servant of my brethren, willing and anxious to do anything in my power to help them. Of my life here you all know I have studied to be quiet and to do my own business and to walk honestly toward them that are without, and one of my chief pleasures has been to work among you as a friend, sharing actively in your manifold labors. But when to the sessions of sweet, silent thought I summon up the past, not what I have done, but the many things I have left undone, the opportunities I have neglected, the battles I have shirked, the precious hours I have wasted—these rise up in judgment.

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A notable period it has been in our history through which we have lived, a period of reconstruction and renovation, a true renaissance, not only an extraordinary revival of learning, but a complete transformation in our educational methods, and I take pride in the thought that in Philadelphia and Baltimore I have had the good fortune to be closely associated with men who have been zealous in the promotion of great reforms, the full value of which we are too close to the events to appreciate. On the far-reaching influence of these changes time will not permit us to dwell. I propose to consider another aspect of our work of equal importance, neither scientific nor educational, but what may be called humanistic, as it deals with our mutual relations and with the public.

Nothing in life is more glaring than the contrast between possibilities and actualities, between the ideal and the real. By the ordinary mortal idealists are regarded as vague dreamers, striving after the impossible, but in the history of the world how often have they gradually molded to their will conditions the most adverse and hopeless! They alone furnish the *Geist* that finally animates the entire body and makes possible reforms and even resolutions. Imponderable, impalpable, more often part of the moral than of the intellectual equipment, are the subtle qualities so hard to define, yet so potent in every-day life by which these fervent souls keep alive in us the reality of the ideal. Even in a lost cause, with aspirations utterly futile, they refuse to acknowledge defeat, and, still nursing an unconquerable hope, send up the prayer of faith in face of a scoffing world. Most characteristic of aspirations of this class is the petition of the Litany in which we pray that to the nations may be given "unity, peace, and concord." Century after century from the altars of Christendom this most beautiful of all prayers has risen from lips of men and women, from the loyal souls who have refused to recognize its hopelessness, with the war-drums ever sounding in their ears. The desire for unity, the wish for peace, the longing for concord, deeply implanted in the human heart, have stirred the most powerful emotions of the race, and have been responsible for some of its noblest actions. It is but a sentiment, you may say, but is not the world ruled by feeling and by passion? What but a strong sentiment baptized this nation in blood, and what but sentiment, the deep-rooted affection for country which is so firmly implanted in the hearts of all Americans, gives to these States today unity, peace, and concord? As with the nations at large, so with the nation in particular; as with people, so with individuals, and as with our profession, so with its members, this fine old prayer for unity, peace, and concord, if in our hearts as well as on our lips, may help us to realize its aspirations. What some of its lessons may be to us will be the subject of my address.

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UNITY.

Medicine is the only world-wide profession, following everywhere the same methods, actuated by the same ambitions, and pursuing the same ends. This homogeneity, its most characteristic feature, is not shared by the law, and not by the church, certainly not in the same degree. While in antiquity the law rivals medicine, there is not in it that extraordinary solidarity which makes the physician at home in any country, in any place where two or three sons of men are gathered together. Similar in its high aims and in the devotion of its officers, the Christian Church, widespread as it is, and saturated with the humanitarian instincts of its Founder, yet lacks that catholicity—*urbi et orbi*—which enables the physician to practice the same art amid the same surroundings in every country of the earth. There is a unity, too, in its aims—the prevention of diseases by discovering their causes, and the cure and relief of sickness and suffering. In a little more than a century a united profession working in many lands has done more for the race than has ever before been accomplished by any other body of men. So great have been these gifts that we have almost lost our appreciation of them. Vaccination, sanitation, anesthesia, antiseptic surgery, the new science of bacteriology, and the new art in therapeutics have effected a revolution in our civilization to which only can be compared the extraordinary progress in the mechanical arts. Over the latter there is this supreme advantage—it is domestic; a bedroom revolution, which sooner or later touches each one of us, if not in person, in those near and dear; a revolution which for the first time in the history of poor, suffering humanity brings us appreciably closer to that promised day when the former things should pass away, when there should be no more unnecessary death, when sorrow and crying should be no more, and there should not be any more pain.

One often hears as a reproach that more has been done in the prevention than in the cure of disease. It is true, but this second part of our labors has also made enormous progress. We recognize today the limitations of the art; we know better the diseases curable by medicine and those which yield to exercise and fresh air; we have learned to realize the intricacy of the processes of disease, and have refused to deceive ourselves with half-knowledge, preferring to wait for the day instead of groping blindly in the dark or losing our way in the twilight. The list of diseases which we can positively cure is an ever-increasing one; the number of diseases the course of which we can modify favorably is a growing one; the number of incurable diseases (which is large and which will probably always be large—is diminishing; so that in this second point we may feel that not only is the work already done of the greatest importance, but that we are on the right path, and year

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by year as we know disease better we shall be able to treat it more successfully. The united efforts of countless workers in many lands have won these greatest victories of science. Only by ceaseless co-operation and the intelligent appreciation by all of the results obtained in each department has the present remarkable position been reached. Within a week or 10 days a great discovery in any part of the world is known everywhere, and while in a certain sense we speak of German, French, English, and American medicine, the differences are trifling in comparison with the general similarity. The special workers know each other and are familiar with each other's studies in a way that is truly remarkable. And the knowledge gained by the one, or the special technique he may devise, or the instrument he may invent is at the immediate disposal of all. A new life-saving operation of the first class devised by a surgeon in Breslau would be performed here the following week; a discovery in practical medicine is common property with the next issue of the weekly journals.

A powerful stimulus in promoting this wide organic unity is our great international gatherings—not so much the international congress of the profession, which has proved rather an unwieldy body, but of the special societies which are rapidly denationalizing science. In nearly every civilized country medical men have united in great associations which look after their interests and promote scientific work. It should be a source of special pride to American physicians to feel that the national association of this country—the American Medical Association—has become one of the largest and most influential bodies of the kind in the world. We cannot be too grateful to men who have controlled its course during the past 10 years. The reorganization so efficiently carried out has necessitated a readjustment of the machinery of the State societies, and it is satisfactory to know that this meeting of our State society, the first held under the new conditions, has proved so satisfactory. But in the whole scheme of readjustment nothing commands our sympathy and co-operation more than the making of the country societies, the materials out of which the State and national associations are built. It is not easy at first to work out such a scheme in full detail, and I would ask of the members of this body not only their co-operation, but an expectant consideration if the plan does not work as smoothly as could be desired. On the county members I would urge the support of a plan conceived on broad national lines. On you its success depends, and on you its benefits will chiefly come.

Linked together by the strong bonds of community of interests, the profession of medicine forms a remarkable world-unit, in the progressive evolution of which there is a fuller hope for humanity than in any other direction.

Concentration, fusion, and consolidation are welding together various subunits in each nation. Much has been done, much remains to do, and to three desiderata I may refer briefly.

In this country reciprocity between the State licensing boards

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remains one of the most urgent local needs. Given similar requirements, and examinations practically of the same character, with evidence of good character, the State board should be given power to register a man on payment of the usual fee. It is preposterous to restrict in his own country, as is now done, a physician's liberty. Take a case in point: A few months ago a man who is registered in three States, an able, capable practitioner of 20 years' standing, a hard student in his profession, a physician who has had charge of some of the most important lives of this country, had to undergo another examination for license. What an anomaly! What a reflection on an united profession! I would urge you all most strongly to support the movement now in progress to place reciprocity on a proper basis. International reciprocity is another question of equal importance, but surrounded with greater difficulties, and, though a long way off, it will come within this century.

The second urgent need is a consolidation of many of our medical schools. Within the past 25 years conditions have so changed that the tax on the men in charge of the unendowed schools has become ever more burdensome. In the old days of a faculty with seven professors a school with 300 students was a good property, paying large salaries, but the introduction of laboratory and practical teaching has so increased the expenses that very little is now left for distribution at the end of the year. The students' fees have not increased proportionately, and only the self-sacrifice and devotion of men who ungrudgingly give their time, and often their means, save a hopeless situation. A fusion of the schools is the natural solution of the problem. Take a concrete example: A union of three of the medical schools of this city would enable the scientific departments to be consolidated at an enormous saving of expense and with a corresponding increase in efficiency. Anatomy, physiology, pathology, physiologic chemistry, bacteriology, and pharmacology could be taught in separately-organized departments which the funds of the united school could support liberally. Such a school could appeal to the public for aid to build and endow suitable laboratories. The clinical work could be carried on at the separate hospitals, which would afford unequaled facilities for the scientific study of disease. Not only in this city, but in Richmond, in Nashville, in Columbus, in Indianapolis and in many cities a "merger" is needed. Even the larger schools of the larger cities could "pool" their scientific interests to the great advantage of the profession.

And the third desideratum is the recognition of our homeopathic brethren that the door is open. It is too late in this day of scientific medicine to prattle of such antique nonsense as is indicated in the "pathies." We have long got past the stage when any "system" can satisfy a rational practitioner, long past the time when a difference of belief in the action of drugs—the most uncertain element in our art!—should be allowed to separate men with the same noble traditions, the same hopes, the same aims and ambitions. It is not as if our homeopathic brothers are asleep—far from it; they

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are awake—many of them at any rate—to the importance of the scientific study of disease, and all of them must realize the anomaly of their position. It is distressing to think that so many good men live isolated, in a measure, from the great body of the profession. The original grievous mistake was ours; to quarrel with our brothers over infinitesimals was a most unwise and stupid thing to do. That we quarrel with them now is solely on account of the old shibboleth under which they practice. Homeopathy is as inconsistent with the new medicine as is the old-fashioned polypharmacy, to the death destruction of which it contributed so much. The rent in the robe of Aesculapius, wider in this country than elsewhere, could be repaired by mutual concessions—on the one hand by the abandonment of special designations, and, on the other, by an intelligent toleration of therapeutic vagaries which in all ages have beset the profession, but which have been mere flies on the wheels of progress.

PEACE.

Many seek peace, few pursue it actively, and among these few we, alas! are not often to be found. In one sense every one of us may be asked the question which Jehu returned to Joram: "What hast thou to do with peace?" since our life must be a perpetual warfare, dominated by the fighting spirit. The physician, like the Christian, has three great foes—ignorance, which is sin; apathy, which is the world, and vice, which is the devil. There is a delightful Arabian proverb, two lines of which run: "He that knows not and knows not that he knows not is a fool—shun him. He that knows not and knows that he knows not is simple—teach him." To a large extent these two classes represent the people with whom we have to deal. Teaching the simple and suffering the fools gladly, we must fight the wilful ignorance of the one and the helpless ignorance of the other, not with the sword of righteous indignation, but with the skillful weapon of the tongue. On this ignorance the charlatan and the quack live, and it is by no means an easy matter to decide how best to conduct a warfare against these wily foes, the oldest and most formidable with whom we have to deal. As the incomparable Fuller remarks, "Well did the poets feign Aesculapius and Circe, brother and sister, * * * for in all times (in the opinion of the multitude) witches, old women and imposters have had a competition with doctors." Education of the public of a much more systematic and active kind is needed. The congress on quackery, which is announced to take place in Paris, with some 25 subjects for discussion, indicates one important method of dealing with the problem. The remarkable exhibit held last year in Germany of everything relating to quacks and charlatans did an immense good in calling attention to the colossal nature of the evil. A permanent museum of this sort might well be organized in Washington in connection with the department of hygiene. It might be worth while to imitate our German brethren in a special national exhibit, though I dare say many of the most notorious sinners would apply for large space,

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not willing to miss the opportunity for a free advertisement. One effective measure is enforced in Germany. Any proprietary medicine sold to the public must be submitted to a government analyst, who prepares a statement (as to its composition, the price of its ingredients, etc.), which is published at the cost of the owner of the supposed remedy in a certain number of the daily and weekly papers.

By far the most dangerous foe we have to fight is apathy—indifference from whatever cause, not from a lack of knowledge, but from carelessness, from absorption in other pursuits, from a contempt bred of self-satisfaction. Fully 25 per cent. of the deaths in the community are due to this accursed apathy, fostering a human inefficiency, and which goes far to counterbalance the extraordinary achievements of the past century. Why should we take pride in the wonderful railway system with which enterprise and energy have traversed the land when the supreme law, the public health, is neglected? What comfort in the thought of a people enjoying great material prosperity when we know that the primary elements of life (on which even the old Romans were our masters) are denied to them? What consolation does the "little red schoolhouse" afford when we know that a Lethean apathy allows toll to be taken of every class from the little tots to the youths and maidens? Western civilization has been born of knowledge, of knowledge won by hard, honest sweat of body and brain, but in many of the most important relations of life we have failed to make that knowledge effective. And, strange irony of life, the lesson of human efficiency is being taught us by one of the little nations of the earth, which has so far bettered our instruction that we must again turn eastward for wisdom. Perhaps in a few years our civilization may be put on trial, and it will not be without benefit if it arouses the individual from apathy and makes him conscious of the great truth that only by earnest individual human effort can knowledge be made effective, if it arouses communities from an apathy which permits medieval conditions to prevail without a protest.

Against our third great foe, vice in all its forms, we have to wage an incessant warfare, which is not less vigorous because of the quiet, silent kind. Better than anyone else the physician can say the word in season to the immoral, to the intemperate, to the uncharitable in word and deed. Personal impurity is the evil against which we can do most good, particularly to the young, by showing the possibility of the pure life and the dangers of immorality. Had I time, and were this the proper occasion, I would like to rouse the profession to a sense of its responsibility toward the social evil—the black plague which devastates the land. I can but call your attention to an important society, of which Dr. Prince Morrow of New York is the organizer, which has for one of its

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objects the education of the public on this important question. I would urge you to join in a crusade quite as important as that in which we are engaged against tuberculosis.

CONCORD.

Unity promotes concord; community of interests, the same aims, the same objects, give, if anything can, a feeling of comradeship, and the active co-operation of many men, while it favors friction, lessens the chances of misunderstanding and ill-will. One of the most gratifying features of our professional life is the good feeling which prevails between the various sections of the country. I do not see how it could be otherwise. One has only to visit different parts and mingle with the men to appreciate that everywhere good work is being done, everywhere an earnest desire to elevate the standard of education, and everywhere the same self-sacrificing devotion on the part of the general practitioner. Man will tell you that commercialism is rife, that the charlatan and the humbug were never so much in evidence, and that in our ethical standards there has been a steady declension. These are the Elijahs who are always ready to pour out their complaints, mourning that they are not better than their fathers. Few men have had more favorable opportunities than I have had to gauge the actual conditions in professional private life, in the schools, and in the medical societies, and as I have seen them in the past 20 years I am filled with thankfulness for the present and with hope for the future. The little rift within the lute is the absence in many places of that cordial professional harmony which should exist among us. In the larger cities professional jealousies are dying out. Read Charles Caldwell's "Autobiography" if you wish for spicy details of the quarrels of the doctors in the first half of the last century in this country. I am sorry to say the professors have often been the worst offenders, and the rivalry between medical schools has not always been friendly and courteous. That it still prevails to some extent must be acknowledged, but it is dying out, but not so rapidly as we could wish. It makes a very bad impression on the public, and is often a serious stumbling-block in the way of progress. Only the other day I had a letter from a most intelligent and appreciative layman who was interested in a large hospital scheme about which I had been consulted. I quote this sentence from it in sorrow, and I do so because it is written by a strong personal friend of the profession, a man who has had long and varied experience with us: "I may say to you that one of the distressing bewilderments of the layman who only desires the working out of a broad plan is the extraordinary bitterness of professional jealousy between not only schoolmen and non-schoolmen, but between schoolmen themselves, and the reflections which are cast on one another

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as belonging to that clique, which makes it exceedingly difficult for the layman to understand what way there is out of these squabbles."

The national and special societies, and particularly the American Medical Association, have brought men together and have taught them to know each other and to appreciate the good points which at home may have been overlooked. As Dr. Brush said yesterday in his address, it is in the smaller towns and country districts that the conditions are most favorable for mutual misunderstandings. Only those of us who have been brought up in such surroundings can appreciate how hard it is for physicians to keep on good terms with each other. The practice of medicine calls equally for the exercise of the heart and the head, and when a man has done his best to have his motives misunderstood and his conduct of a case harshly criticised, not only by the family, but by a colleague who has been called in, small wonder, when the opportunity arises, if the old Adam prevails and he pays in kind. So far as my observation goes there are three chief causes for the quarrels of doctors. The first is lack of proper friendly intercourse, by which alone we can know each other. It is the duty of the older man to look on the younger one who settles near him not as a rival, but as a son. He will do to you just what you did to the old practitioner, when, as a young man, you started—get a good many of your cases; but if you have the sense to realize that this is inevitable, unavoidable, and the way of the world, and if you have the sense to talk over, in a friendly way, the first delicate situation that arises, the difficulties will disappear and recurrences may be made impossible. The young men should be tender with the sensibilities of their seniors, deferring to their judgment and taking counsel with them. If young graduates could be taken more frequently as assistants or partners, the work of the profession would be much lightened, and it would promote amity and good fellowship. A man of whom you may have heard as the incarnation of unprofessional conduct, and who has been held up as an example of all that is pernicious, may be, in reality, a very good fellow, the victim of petty jealousies, the mark of the arrows of a rival faction, and you may, on acquaintance, find that he loves his wife and is devoted to his children, and that there are people who respect and esteem him. After all, the attitude of mind is the all-important factor in the promotion of concord. When a man is praised, or when a young man has done a good bit of work in your special branch, be thankful—it is for the common good. Envy, that pain of the soul, as Plato calls it, should never for a moment afflict a man of generous instincts and who has a sane outlook in life. The men of rival schools should deliberately cultivate the acquaintance of each other and encourage their students and the junior teachers

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to fraternize. If you hear that a young fellow just starting has made mistakes or is little "off color," go out of your way to say a good word to him or for him. It is the only cure; any other treatment only aggravates the malady.

The second great cause is one over which we have direct control. The most widespread, the most pernicious of all vices, equal in its disastrous effects to impurity, much more disastrous often than intemperance, because destructive of all mental and moral nobility, as are the others of bodily health, is uncharitableness—the most prevalent of modern sins, peculiarly apt to beset all of us, and the chief enemy to concord in our ranks. Oftentimes it is a thoughtless evil, a sort of tic or trick, an unconscious habit of mind and tongue which gradually takes possession of us. No sooner is a man's name mentioned than something slighting is said of him or a story repeated which is to his disadvantage, or the involuntary plight of a brother is ridiculed, or even his character is traduced. In chronic and malign offenders literally "with every word a reputation dies." The work of a school is disparaged, or the character of the work in a laboratory is belittled, or it may be only a faint praise that damns, not the generous meed from a full and thankful heart. We have lost our fine sense of the tragic element in this vice and of its debasing influence on the character. It is interesting that Christ and the apostles lashed it more unsparingly than any other. Who is there among us who does not require every day to lay to heart that counsel of perfection: "Judge not according to the appearance, but judge righteous judgment." One of the apostles of our profession, Sir Thomas Browne, has a great thought on the question:

"While thou so hotly disclaimest the devil, be not guilty of diabolism. Fall not into one name with that unclean spirit, nor act his nature who thou so much abhorest; that is, to accuse, calumniate, backbite, whisper, detract or sinistrously interpret others. Degenerous depravities and narrow-minded vices! Not only below St. Paul's noble Christian, but Aristotle's gentleman. Trust not with some that the Epistle of St. James is apocryphal, and so read with less fear that stabbling truth, that in company with this vice thy religion is in vain. Moses broke the tables without breaking of the law, but where charity is broke the law itself is shattered, which cannot be whole without love, which is the fulfilling of it. Look humbly upon thy virtues, and though thou are rich in some, yet think thyself poor and naked without that crowning grace which thinketh no evil, which envieth not, which beareth, hopeth, believeth, endureth all things. With these sure graces, while busy tongues are crying out for a drop of cold water, mutes may be in happiness, and sing the Trisagion in heaven."

And the third cause is the wagging tongue of others, who are

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too often ready to tell tales and make trouble between physicians. There is only one safe rule—never listen to a patient who begins with a story about the carelessness and inefficiency of Dr. Blank. Shut him or her up with a snap, knowing full well that the same tale may be told of you a few months later. Fully half of the quarrels of physicians are fomented by the tittle-tattle of patients, and the only safeguard is not to listen. Sometimes it is impossible to check the flow of imprecation and slander, and then apply the other rule, perfectly safe, and which may be commended as a good practice—never believe what a patient tells you to the detriment of a brother physician, even though you may think it to be true.

To part from the profession of this country and from this old Faculty, which I have learned to love so dearly, is a great wrench, one which I would feel more deeply were it not for the nearness of England and for the confidence I feel that I am but going to work in another part of the same vineyard, and were it not for the hope that I shall continue to take interest in your affairs and in the welfare of the medical school to which I owe so much. It may be that in the hurry and bustle of a busy life I have given offense to some —who can avoid it? Unwittingly I may have shot an arrow o'er the house and hurt a brother; if so, I am sorry and I ask his pardon. So far as I can read my heart I leave you in charity with all. I have striven with none, not, as Walter Savage Landor says, because none was worth the strife, but because I have had a deep conviction of the hatefulness of strife, of its uselessness, of its disastrous effects, and a still deeper conviction of the blessings that come with unity, peace, and concord. And I would give to each of you, my brothers—you who hear me now, and to you who may elsewhere read my words—to you who do our greatest work, laboring incessantly for small rewards in towns and country places—to you the more favored ones who have special fields of work—to you teachers and professors and scientific workers—to one and all, throughout the length and breadth of the land—I give a single word as my parting commandment:

"It is not hidden from thee, neither is it far off. It is not in heaven that thou shouldst say, 'Who shall go up for us to heaven, and bring it unto us that we may hear it and do it?' Neither is it beyond the sea that thou shouldst say, 'Who shall go over the sea for us, and bring it unto us that we may hear it and do it?' But the word is very nigh unto thee, in thy mouth and in thy heart, that thou mayest do it—charity."

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LIBRARIAN'S REPORT, 1904-1905.

Mr. Chairman and Members of the Library Committee:

This year a permanent assistant has been employed, whose services have been shared with the secretary. After this year the library will derive greater benefit from this arrangment, the work of the secretary having been unusually heavy as a result of reorganization.

The Bureau of Exchange of the Association of Medical Librarians was transferred to Brooklyn on July 1, thus removing a great deal of extra work and giving us the use of our basement for storage purposes. Extra assistance has only been employed for six weeks, but there is need of six months' special work in the basement alone. It is impossible for anyone not in library work to realize the detail necessary to place a book on the shelf of a library and the numberless administrative details. We are very grateful to the library committee for their patience and help.

The completion of the inventory of the books from the cards revealed a startling number of lost books—46. Added to this are four borrowed books which we have been unable to recover, also four books which have been lost this year. Each year we find many numbers of journals missing. Some of these are replaced with difficulty, but many not at all, making it impossible to bind the volume, and thus spoiling an otherwise complete set.

There is almost no change in the use of the library this year and last. There were 5076 readers, and 1584 books loaned for home use this past year.

The library now numbers 14,590 volumes, including 4764 bound journals; also 5719 unbound monographs and reprints. Of these, 767 volumes and 418 reprints were donated during the year.

Books: Association of Medical Librarians, 7; Dr. I. E. Atkinson, 26; Book and Journal Club, 11; Boston Medical Library, 10; Enoch Pratt Free Library, 8; Dr. J. M. T. Finney, 2; Dr. J. D. Fiske, 2; Frick Library, 264 (28 being the gift of Dr. Osler); Dr. J. Friedenwald, 2; Dr. J. S. Fulton, 3; Dr. L. K. Hirshberg, 2; Dr. Howard Kelly, 1; Library Committee Fund, 6; Library Surgeon-General's Office, 1; Luzerne County Medical Library, 1; Dr. S. K. Merrick, 5; Dr. S. W. Mitchell, 1; Dr. R. Murdoch, 59; Dr. G. W. Norris, 3; Ophthalmological Section, 5; Dr. W. Osler, 40; Dr. S. Paton, 8; Dr. H. Richardson, 1; Rockefeller Institute, 1; Dr. J. Ruhräh, 1; Dr. C. E. Simon, 2; Dr. J. T. Smith, 2; Dr. W. S. Thayer, 53; Dr. J. W. Williams, 26; Dr. J. G. Wiltshire, 1; by binding journals, 215.

Reprints: Association of Medical Librarians, 4; Dr. Buller, 1; Dr. E. F. Cordell, 4; Enoch Pratt Free Library, 50; Mr. C. P. Fisher, 1; Dr. Frazier, 17; Dr. H. Friedenwald, 3; Dr. G. L. Hunner, 13; Dr. Reid Hunt, 2; Dr. A. Jacobi, 1; Dr. G. G. Lewis, 2; Dr. Mears, 1; Dr. S. W. Mitchell, 36; Dr. R. Murdoch, 213; Dr. Musser, 9; Dr. G. W. Norris, 23; Dr. S. Paton, 6; Dr. J. Rurähh, 1; Dr. W. W. Steiner, 3; Dr. C. K. Mills, 4; Dr. W. A. B. Sellman, 1; Dr. S. Theobald, 2; Dr. F. Willard, 2; Dr. J. W. Williams, 4; Dr. R. Winslow, 15.

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Miscellaneous journals were presented by Drs. J. E. Clagett, W. S. Gardner, H. B. Jacobs, John G. Jay, R. Murdoch, W. B. Platt, W. W. Russell, G. Lane Taneyhill, W. S. Thayer. There were also many duplicates donated, which are used for exchange.

Another appeal has been made for reprints of articles by members of the Faculty, and reports of hospitals and medical institutions in the city and State. Full files of these should be found on our shelves.

Of the 347 volumes collated and bound, there were 100 selected from among the old books and rebound in buckram. Many more such valuable books require rebinding.

There are 157 journal files to be found on the reading-room shelves. Of these, 52 were donated by the Book and Journal Club, 12 by Dr. Osler, 1 by Dr. Hemmeter, 8 through Association of Medical Librarians, 2 by University of Maryland, 55 by subscription of library committee, and 25 by exchange.

Among the books purchased by the Frick Library Fund there are 148 valuable English transactions and journals selected by Dr. Osler in London.

A notable contribution has been made to our museum by Dr. J. E. Clagett, who presented the glass mortar and pestle and several instruments which belonged to a founder of the Faculty, Dr. Zachariah Clagett. Dr. Clagett also presented pictures of the Clagett family.

LIBRARY FUNDS.

Petty Cash Account.

Receipts.

Balance brought forward April 15, 1904	$106 74
Fines on books overdue	41 87
Sale of duplicates	4 45
Total receipts	$153 06

Expenditures.

Stamps	$12 24	
Cleaning books	22 50	
Supplies	5 75	
Express	5 41	
Drayage	8 25	
Newspapers	3 17	
Books	2 70	
Customs entry	2 50	
Incidentals	5 27	
Assistance	36 00	
Total expenses		$103 79
Balance		$49 27

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GENERAL FINANCIAL STATEMENT.

Receipts.

Library appropriation, 1904-1905	$1200 00
Contributions from four medical schools	150 00
Total receipts	$1350 00

Expenditures.

Association Medical Librarians, dues	$10 00
Association Medical Librarians, librarian's expenses	25 00
Deutsch Company, supplies	4 25
A. Hoen & Co., supplies	11 50
Library Bureau, supplies	24 50
Nunn & Co., supplies	14 58
Index Medicus	5 00
Maryland Medical Journal	2 00
New York Medical Journal	5 00
R. L. Polk & Co	6 00
J. Ruzicka, binding	287 15
G. E. Stechert, journals	313 18
Hammond Typewriter Co	100 00
Librarian's salary on pt. library committee	480 00
Assistant's salary on pt. library committee	143 75
Janitor's salary on pt. library committee	155 00
Total expenses	$1586 91
Deficit	$236 91

Respectfully submitted,

MARCIA C. NOYES,
Librarian.

(Signed) DR. GEORGE J. PRESTON, Chairman;
DR. WM. OSLER,
DR. J. W. WILLIAMS,
DR. S. PATON,
DR. C. O'DONOVAN.

Book Reviews.

A HANDBOOK OF NURSING FOR HOSPITAL AND GENERAL USE. Published under the direction of the Connecticut Training School for Nurses connected with the General Hospital Society, New Haven, Conn. Philadelphia and London: J. B. Lippincott Company. 1905.

This is a revised and enlarged edition of the Connecticut Handbook of Nursing, first published in 1878. It includes 14 chapters on nursing proper and two chapters on family hygiene and emergencies. There are 25 illustrations, most of them from photographs. It is a very good little book for its purpose.

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MARYLAND MEDICAL JOURNAL.

JOHN S. FULTON, M.D., *Editor.*

Associate Editors:

THOMAS R. BROWN, M.D. | HUGH H. YOUNG, M.D.
ROBERT REULING, M.D. | JOSE L. HIRSH, M.D.

BALTIMORE, OCTOBER, 1905

THE INTERNAL-REVENUE TAX ON LIQUORS DISGUISED AS MEDICINES.

MR. JOHN W. YERKES, internal-revenue commissioner, has recently decided that several so-called medicines are, in fact, no more than alcoholic beverages, and as such subject to the rectifier's tax. Druggists who sell these compounds are also liable to the retail liquor dealer's tax. The order goes into effect on December 1, 1905. The list of patent and proprietary medicines affected by this decision is now in course of preparation. The Revenue Department will not accept the sworn statements of manufacturers as to the composition of their nostrums, but samples purchased in the open market and analyzed by government chemists will determine the classification of these products. The list will undoubtedly be a rather long one, and will include some of the most profitable nostrums on the market. The order may not seriously impair the sales of these intoxicants, but it will relieve the drug trade of the opprobrium of complicity in the illicit-liquor business. Among the small druggists in Baltimore this order has created some consternation. The tax of $25 a year imposed by the government is not a serious matter except in so far as it tends to classify the small druggist with the liquor dealers more closely than he likes. The large druggists carry the liquor license regularly without incurring this unpleasant distinction. The results to the community will, however, make the possible injury to small druggists seem quite unimportant. When people know that many of the widely-advertised medicines are only bad cocktails, druggists will be somewhat wary of promoting drunkenness by recommending these nostrums, but there will still remain the large army of consumers who desire to buy intoxicants under false names, and these will be no worse off nor any wiser if they know the truth about the seller as well as about the thing sold. Public convenience will suffer nothing in the suppression of a good many small drug stores. Not a few such shops hold out false pretenses in calling themselves drug stores, for they do not keep on hand the drugs or medical supplies which are likely to be called for. They keep toilet articles and the nostrums and pharmaceuticals useful in their own counter-prescribing, but many of them are not prepared to fill physicians' prescriptions. They, of course, accept such prescriptions, and very easily conceal their unpreparedness to fill them. It is only necessary to say that half an hour will be required to fill the prescription, and that the medicine will be sent to the house at the end of that time. The formula may call for 30 tablets of sodium salicylate, 5 grains each. The half-hour is utilized in

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sending a messenger or telephoning for 100 or 500 such tablets. Perhaps there are not many druggists who handle their prescription trade in this way, but it is quite evident that such a prescription business can be but an insignificant producer of revenue, and that public convenience would in no way suffer if all such dealers became wholly dependent upon the popular demand for nostrums and sophisticated liquors.

It is a mistake to suppose that the fraudulently branded liquors are distributed chiefly by small dealers. Several large concerns dispose of enormous amounts, utilizing bargain-counter methods to attract purchasers. Cut-rate pharmacies and department stores have long been as thorns in the flesh of patent-medicine moonshiners, though their peculiar methods have probably increased the total sales of such products. The new order will probably not greatly diminish the consumption of the taxed nostrums, but it will tear off the disguise and will somewhat diminish the profits to the manufacturers.

THE QUARANTINE CONFERENCE.

On November 9 and 10 the governors of at least 12 Southern States, with men of high commercial standing in the South, will meet in Chattanooga to consider the subjects of quarantine and immigration. The perils of immigration have claimed a great deal of attention from Southern statesmen in recent years, and mature views on this subject will no doubt be brought to the conference from all quarters. The pains of quarantine are of very recent and very acute experience, and the opinions on this subject will probably be clear only as to the general character of quarantine, that it is a most distressing nuisance, to be mitigated if possible, but not to be altogether avoided. It is interesting to note how promptly the average Southerner, even when under the ban of quarantine, will speak up in its defense if one ventures the opinion that quarantine is an unnecessary nuisance. Four years ago the prophylaxis of yellow fever meant quarantine or nothing, and one cannot wonder that four years have not sufficed to establish the truth that yellow fever may be controlled by definite and orderly procedures without creating disturbance of any sort beyond the immediate vicinity of infection. As Dr. Kohuke says, "Vestiges of old beliefs have a tendency to cling to the brain independently of their value," and time must always be allowed for new principles to become convertible to the uses of the people. It might, of course, be an extravagant kind of reform to cut quarantine procedures down at once to the precise measure of scientific necessity, without regard to the characteristics of the people who are to be defended, but the need of a man of science to be restrained by a knowledge of social and political conditions is no greater than the need of a man of affairs to keep in view the limits which science sets in such matters.

The common belief is that quarantine is a public-health measure, established on the authority of preventive medicine, and practiced by all civilized nations in the prevention of cholera, smallpox, plague, and yellow fever. The fact is that the onerous features of even maritime quarantine

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have been practically eliminated by the practice of foreign inspection, and inland quarantine has long since been repudiated by advanced hygienists as unnecessary, if not quite useless.

In the prevention of yellow fever the necessary outer defenses are but three, and these so simple that they would soon be recognized under the dreadful name of quarantine. These steps are notification immediately on the appearance of yellow fever, given by the health officer of the invaded locality to the health authorities of other localities, and prompt arrangements to regulate travel by means of detention and surveillance. Notification presupposes that the health board of a given locality will know when yellow fever invades that locality, but local boards of health in the South, as a rule, have not and cannot get this priceless information, for there are no laws requiring physicians to report infectious diseases. Assuming Southern health boards to know what is going on under their official noses, they would still have to acquire the habit of acting with promptness and good faith toward each other, and this desideratum should not be difficult of attainment. These initial difficulties being cleared away, the regulation of travel would be very simple. This business should be turned over to the federal government, and with the present distribution of United States public-health officials delay need not occur. Wherever decent local sanitary government exists, the safety of public health is practically assured if the movements of people out of infected localities be governed by detention and surveillance. The meaning of detention is obvious, and it is applied only to the sick and those known to have been exposed. Surveillance applies to all outgoing travelers, and covers the period of incubation of yellow fever, dating from the time of departure. It includes reasonable care in ascertaining and certifying the probability of non-exposure, and the timely transmission of names and destinations (including address) of passengers en route to the authorities of other localities.

Perhaps yellow fever is making its last great demonstration in the United States. The oversanguine proclaim the final disappearance of yellow fever from American soil with the termination of the present fight at New Orleans. It is a vain boast. Recent operations have demonstrated the scientific means of suppressing yellow fever. The means of excluding yellow fever have undergone no improvement. We may hope for the announcement sometime in 1905 that yellow fever has been suppressed in New Orleans, but the announcement that the disease has been extinguished, if made before November, 1906, will be premature. Several years must pass before one can say confidently that the means of excluding yellow fever from any of the Gulf States have been made effective. Yellow fever will appear and reappear, and quarantine will reappear at intervals so long as health officers are unable to recognize yellow fever in less than epidemic proportions. When good notification laws are enacted and enforced, when boards of health are organized for constant instead of intermittent service, when all quarantine matters are entrusted to the general government, and when the ugly features of quarantine have been replaced by simple notification, detention and surveillance, it will then be time to promise the complete and final disappearance of epidemic yellow fever.

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Medical Items.

A PLAGUE of mosquitoes has fallen on the city of London.

DR. MILTON R. WALTER has removed from Baltimore to Chicago.

DR. EDWARD J. BERNSTEIN has removed from Baltimore to Kalamazoo, Mich.

BOSTON is alarmed about the prevalence of typhoid fever on her watershed.

DR. JOSEPH C. WUNDER of Baltimore fell from a porch and fractured his lower jaw on September 1.

DR. EDWIN GEER was painfully injured about the head and face by falling from a street car on September 6.

ON July 20 the Cecil County Medical Society held its quarterly meeting at Elkton. Addresses were made by Dr. S. T. Earle of Baltimore and Dr. R. M. Stump of Perryville.

THE prize for the best essay on the treatment of trachoma has been awarded by the Hungarian government to Professor Kohut of Konigsburg. Its value is 1000 Kronen.

ON July 11-12 two very interesting meetings were held by the Allegany and Garrett County medical societies, at which Dr. S. T. Earle made addresses on the power invested in the county medical society under the new constitution.

ON September 7 the sewerage commission met and began preparations for actual work by appointing three consulting engineers—Randolph Hering of New York, Samuel Gray of Providence, and Frederick P. Stearns of Boston.

ON August 14 one of the most valuable anatomical collections in the world was lost in the fire which destroyed the Medical Hall of the University of Pennsylvania. The loss is estimated at $150,000. The anatomic collection cannot be replaced.

THE secretary of the French Society for the Encouragement of Cremation reports that there are now 90 crematories in Europe and America; that up to this year 125,000 bodies have been incinerated. The largest number of incinerations so far reported in one place is 370 in the year 1904 in Buenos Ayres.

A MEETING of the Prince George County Medical Society was held on July 1 in Washington, D. C. The Faculty was represented by Dr. S. T. Earle, president, and Dr. T. H. Brayshaw, councilor. While the meeting was not a large one, those present were deeply interested in the reorganization plans, and expressed their hearty co-operation.

AMONG the Americans who were made honorary fellows of the Royal College of Surgeons of Edinburgh at the fourth centenary on July 22 were Dr. W. S. Halsted and Dr. Howard A. Kelly of Baltimore, Dr. W. W. Keen of Philadelphia, Dr. Wm. T. Mayo of Rochester, Minn.; Dr. Charles McBurney of New York, and Dr. John Collins Warren of Boston.

THE Internal-Revenue Department has decided that after December 1 all druggists who sell patent medicines containing whiskey or other distilled spirits as their chief ingredient must pay the special liquor-dealer's tax. The manufacturers of these medicines must pay the special tax imposed on rectifiers and liquor dealers. Baltimore druggists are very much exercised over this announcement.

THE venerable Dr. Norman Bruce Scott of Hagerstown died on September 21, aged 86. Dr. Scott was born in 1819 at Bruceville, Carroll county, and practiced medicine at Hagerstown for 50 years, from 1844 to 1894. He was a great-nephew of Dr. Upton Scott of Annapolis, the first president of the Medical and Chirurgical Faculty of Maryland. His son, Dr. J. McPherson Scott, is an ex-president of the Faculty and secretary of the State Board of Medical Examiners.

THE rigors of quarantine in some parts of the South amount to damage as severe as the yellow fever itself could inflict. The mails and freights of all sorts are stopped, and such communities have maintained absolute isolation by surrounding themselves with an armed cordon. This sort of quarantine is very expensive, and the conditions of living within such a cordon are extremely difficult. One Louisiana town is said to have refused a consignment of carbolic acid. Coal oil and steel rails have been excluded from some towns.

THE regular quarterly meeting of the Medical Association of Howard county was called to order at 2 o'clock on July 4. The minutes of the preceding meeting were read and adopted. Dr. Augustus Stabler of Montgomery county read a very able paper on septicemia, which was discussed by Drs. Rogers, Gambril, and Nichols. Dr. Gambril spoke on the impor-

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tance of first aid in surgery. Cases were reported by Drs. Rogers, Williams, Gambril, Nichols, and Owings. Dr. Williams represented the Council of the Faculty.

TWELVE governors of Southern States have issued a call for a quarantine convention at Chattanooga on November 9 and 10 for the purpose of obtaining a modern system of quarantine. "This is necessary," they say, "if we would save our land from the demoralizing and brutalizing tendencies of panic-inspired quarantine." Governor Warfield of Maryland was one of the signers of the call. The other signers were the governors of Tennessee, Louisiana, West Virginia, Virginia, Florida, Mississippi, Missouri, Kentucky, South Carolina, Georgia, and Texas.

AMONG the recent vagaries of quarantine are the following: The governor of Arkansas refused permission to Dr. Chassaignac to pass on a special train through a small strip of Arkansas on his way to the relief of an infected place in Louisiana. The State Board of Health of Arkansas resigned, and the governor appointed a new board. The new board immediately instituted quarantine against Louisiana and Missisippi. One or two boards of health refuse to recognize certificates which do not bear the words "Not paid for." A citizen of Memphis, returning from a visit in Maryland and bearing a certificate from the State Board of Health of Maryland, was detained on her arrival at Memphis until her friends were notified and identified her.

THE one hundred and seventh semiannual meeting of the Medical and Chirurgical Faculty was held at Deer Park, Garrett county, on September 21 and 22. The House of Delegates had two meetings—one at 6.30 on Thursday and the other at 9 A. M. on Friday. The first general meeting of the Faculty occurred at 8 P. M. on Thursday, with a series of brief reviews of recent medical progress. Dr. T. B. Futcher gave the review in medicine, Dr. Frank Martin the review in surgery, Dr. Guy Hunner in gynecology, and Dr. Frank D. Sanger in laryngology. Dr. Wm. S. Thayer made an address on "Some Public Duties of the Physician." On Friday morning the program was as follows: "Palliative Operations for Intracerebral Tumors," Dr. Harvey W. Cushing; "Tumors of the Thyroid," Dr. Frank J. Kirby; "Report of Eight Cases of Lateral Sinus Thrombosis, With a Discourse on the Advisability of Ligating the Internal Jugular Vein Before Opening the Sinus," Dr. H. O. Reik; "Artificial Interruption of Pregnancy in Toxemia—(a) Time to Interfere; (b) Methods to Be Used," Dr. J. M. Rowland. In the afternoon the visitors were the guests of the medical societies of Garrett and Allegany counties. In the evening at 8 o'clock Dr. Charles A. L. Reed of Cincinnati delivered an address entitled "The American Family." The attendance at this meeting is said to have been considerably larger than at any semiannual meeting in recent years. The proposed medical-practice act was freely discussed, and was referred back to the committee for further consideration and to be reported at a special meeting of the Faculty to be held later.

THE third annual meeting of the Cumberland Valley Medical Association was held at Mount Holly Springs, Pa., August 29, 1905. Dr. V. M. Reichard, Fairplay, Md., presided. The session was called at 11.45 A. M. Major James Evelyn Pilcher Carlisle welcomed the association to the county of Cumberland and to Mount Holly Springs. Drs. Pilcher, Ramsey, and Miller were named as a committee to revise the constitution and by-laws of the association. After routine business the following addresses and papers were presented: The president's address, by Dr. V. M. Reichard, Fairplay, Md., entitled "The Physician's Debt to His Profession;" "Diaphragmatic Hernia of Twenty-one Years' Standing," Dr. J. Bruce McCreary, Shippensburg; "Medical Lessons of the Far East," Dr. J. E. Pilcher, Carlisle; "Our Relations to the World at Large," Dr. Chas. F. Palmer, Chambersburg; "Eye-Strain," Dr. Augustus C. Maisch, Hagerstown, Md. The association adjourned at 2 o'clock, and at 3 o'clock sat down to a dinner in the dining hall of Mount Holly Inn. Major James Evelyn Pilcher was toastmaster. Toasts were responded to by Drs. McCreary, Ramsey, Devilbiss, Keller, Reichard, Amberson, and Spangler. At the end of the banquet the nominating committee made the following report, which was adopted: President, James Evelyn Pilcher, M.D., Carlisle; vice-presidents, D. F. Unger, M.D., Mercersburg; Augustus C. Maisch, M.D., Hagerstown, and Geo. C. Borst, M.D., Newville; secretary, J. J. Coffman, M.D., Scotland; assistant secretaries, Drs. P. R. Koons, Mechanicsburg; H. C. Devilbiss, Chambersburg, and D. C. R. Miller, Mason and Dixon, for Washington county, Maryland; treasurer, J. J. Koser, M.D., Shippensburg, Pa.

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ON SOME PUBLIC DUTIES OF THE PHYSICIAN.

By W. S. Thayer,

Professor of Clinical Medicine, Johns Hopkins University.

ADDRESS DELIVERED BEFORE THE MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND AT DEER PARK, SEPTEMBER 22, 1905.

Most of us are familiar with the oft-expressed regret for the passing of the day when the family physician was the sole counsellor with regard to all fleshly and many spiritual ills of his patient, and it must be acknowledged that, along with the many advantages which spring from the modern tendency toward concentration and limitation of one's field of action, there are some drawbacks. The patient, passing from one adviser to another, with whom there is, perhaps, but a formal acquaintance, is too likely to miss the support arising from the old confidence and faith in the familiar and trusted friend; while, on the other hand, it is doubtless true that this old confidence and faith, this friendship and reliance, inevitably broadened the physician and developed in him a capacity for beneficent personal influence which often surpassed even that of his brother of the clergy. This personal influence the urban practitioner of today is unquestionably losing to a certain extent. He no longer occupies in the family quite the same place that he formerly filled. And the same change is taking place, little by little, even in the life of the country doctor, for with modern methods of transportation the advantages and disadvantages of the increased tendency toward specialism are offered freely to the rural population. It is not uncommon for those of us who practice in town to be visited by the patients of our country brethren, who, too often with a false conception of the superior powers of the city physician, seek his advice without consulting him who is their safest guide and counsellor, in much the same manner as the patient in the city consults, upon the advice of friends or on his own fancy, this or that "specialist"—a misty and magical name

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today—of the limits of wnose domain they have, alas, a sadly hazy idea. But although time has doubtless taken something from the peculiarly charming personal relations which have often existed between doctor and patient, yet it has brought abundant compensation both to the public and to the medical profession. On the one hand, division of energy and concentration of forces have given to the physician an insight into the nature and cause of disease which has put into his hands powers of which in days past he had little fancy; and this very fact, on the other hand, affords the public an ever-increasing assurance of protection from many of its most dreaded enemies. The physician may have lost some of his personal influence, but he has gained invaluable capacity for practical public service. But a capacity for public service and knowledge of certain means which may prevent the spread of disease and save human life are not gains which can be enjoyed at leisure. The possession of such knowledge, of such capacity, of such opportunities implies the duty to make use of all. Of some of those duties which have grown upon us in late years I would speak briefly today.

It is, after all, but a relatively short time since microscopical, bacteriological and chemical methods of investigation first took a regular place in the practice of medicine. When many of us who are here today entered upon the exercise of our profession the use of most of these methods of study was limited to a few special workers in the laboratories of universities or schools. Today they are invaluable for the accurate diagnosis of many of the most important maladies with which we have to deal. With the increasing demands for more complicated and finer methods of diagnostic investigation the curriculum of our medical schools has broadened, the time required for medical training has lengthened, the advantages offered to the student have greatly increased. But if the practitioner enters upon his work today with a broader basis of information and experience than was true of the graduate of 20 years ago, it is nevertheless often difficult or impossible for him to utilize many desirable or, indeed, one may in some instances say, necessary diagnostic procedures, inasmuch as the old-time demands of practice have in no way diminished, while the new methods of investigation impose upon him more work than one man can accomplish in 24 hours. And although to the city practitioner the laboratories of hospitals and special students are of considerable assistance, yet the expense associated with the relegation of this work to private investigators is beyond the means of a great part of the urban public, while distance and the lack of special arrangements deprive the majority of rural residents of all these advantages. Here, however, our State and local boards of health are rapidly offering to the busy practitioner the necessary assistance. Today, for any physician in the State of Maryland, the Board of Health undertakes, gratuitously, examinations of the blood to assist in the diagnosis of typhoid fever or malaria, of cultures from the throat in cases of suspected diphtheria, of the sputa whenever

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there is a question of tuberculosis. In the city of Baltimore the same assistance is offered by the local board. Thus the country practitioner stands upon the same level with his city brother as regards these necessary diagnostic measures. Such opportunities he should not neglect to utilize.

In any suspected epidemic of cholera, of yellow fever, of plague, of typhoid fever, of cerebro-spinal meningitis the State Board of Health is ever ready to furnish the necessary expert investigators and to offer every assistance.

What have been the first results of the advances of late years in our knowledge of the nature, especially, of the infectious diseases, and of the discovery of improved diagnostic methods? The answer is obvious. The knowledge of the nature of an infectious disease, and of the manner in which the poisonous agent enters the body, have been followed in many instances by the discovery of methods of destroying these agents or preventing their entry into and their dissemination in the organism, while early diagnosis, with the *recognition of the first cases,* has given us the key to successful prophylaxis. We possess today, for instance, knowledge which should enable us in an ideally-governed State to recognize at the outbreak and largely prevent the spread of diphtheria, typhoid fever, malarial fever, yellow fever, cholera, plague, tuberculosis. Moreover, with regard to one of the most terrible of the scourges of mankind, diphtheria, we have at hand an almost certain means of cure if the disease but be recognized at a sufficiently early period. Why, then, does tuberculosis exist widespread? Why does typhoid fever carry off every year hundreds of the flower of our country? Why does malaria in some localities wear out, debilitate, and render incapable for work and a prey to disease valuable members of the community?

Is this the fault of our governors and legislators? Not at all. It is because we live in a state of society which is still far from ideal—in a community in which everyone is, to a greater or less extent, working for himself, with little intelligent responsibility for the general good. It is because we still lack a large measure of the attributes of true civilization. With the barbarous and untutored savage in the African jungle every word and every act are determined by the impulse of the moment, by that familiar instinct which impels us all to follow the path of least resistance. His simple mind is incapable of grasping the idea of the practical advantages of truth and loyalty and justice, much less of any religious or moral obligation. And in his more or less guileless desire to make his own pathway smooth by obliging his civilized neighbor when it is convenient, and knocking him in the head when that seems the simplest way to comfort, he inevitably entangles himself in a snare which brings about his own destruction. The idea of the necessity of the practice of truth and justice with our neighbor, of charitable and loyal co-operation with our fellows, as the basis on which we may assure for ourselves the safest and happiest form of government is an idea which is acquired only by

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many centuries of bitter experience. And while the more intelligent part of most Christian communities of today, either through faith or reason, or both, profess to accept these principles with regard to the conduct of life and society, the philosopher from another planet would, I fear, be amazed should he attempt to compare individual profession with collective practice.

The degree to which a community is capable of disinterested co-operation for the promotion of the general welfare is a good measure of its grade of civilization. Should one, however, apply such a test to the manner in which the medical profession and the general public in this country deal with affairs of public health I fear that his first sentiment might not be one of encouragement.

When we meet in our practice with a suspected case of diphtheria our first thought is too apt to be, "What a nuisance! If this case be reported, the house will be posted; there will be no end of trouble for the family"—who are at the same time urging us to say nothing for the present, and will take it sorely amiss if we notify the Board of Health. What a temptation, if the symptoms be mild, to take every precaution and let it pass, or, if there be doubt, to take no measures at the moment, and not to alarm the family until we are perfectly sure of the nature of the case; and in either instance delay may mean, through the ignorance or carelessness of the family, the beginning of an epidemic.

If, again, it be a case of typhoid fever, how often do we begin the necessary precautions at the very onset, at the time when we nervous; if we insist upon the proper precautions, she will immediately understand what is in our mind. She "will die if she suspects it is typhoid fever." The business of the hotel will be ruined if anyone fancies this possibility. The neighborhood will be discredited. There is a good chance, after all, that it may amount to nothing. One waits, therefore, until, after a week or two, a positive Widal test or the natural course of circumstances determines the diagnosis, and during this week or two the mother has, perhaps, acquired the disease by direct contagion, or contamination of food or water supply may have started an epidemic in the house or neighborhood.

In a Southern city, in the summer, a few cases of fever occur of a puzzling or uncertain nature. Are they perhaps dengue? What if they should be yellow fever? But, no; that is not likely. We have had no serious yellow fever for years, and the condition of the city is now so much better than it was. Might it not be safer to notify the Health Department at once of these uncertain and slightly suspicious cases and adopt all precautions? Of course, if one were but sure. But, then, think of the results if the cases be innocent, after all, and yet our suspicions become public—a shotgun quarantine, the business of the city at a standstill, and with its gradual resumption a certain inevitable permanent loss to the advantage of the rival community. Suppose, even, that time should show it to be yellow fever; it would be early enough to take action then. Five or six years ago there were a few cases which the

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Health Department said were yellow fever, and yet there was no general epidemic. And then, to be sure, there were many among us who believed and stated with assurance that these cases were not yellow fever at all, but only estivo-autumnal malaria. After all, that suspicion was born only of over-conscientiousness. It would be folly to upset the whole State on such mere fancy. And from two to three weeks later there is a sudden outburst of new cases, some of which are fatal, and but too clearly the dreaded enemy—but it is already too late, and, despite intelligent and vigorous action by local and national authorities, there is an epidemic of thousands of cases, with the loss of hundreds of valuable lives.

The only daughter of the family is brought to you with evident tuberculosis. The parents realize that there is no hope; they can ill afford to take her away, and they know it is useless; but "Above all, Doctor, don't tell her what it is. She does not suspect it, and it will kill her if she has any idea of it." But it is of importance to her to know the truth that she may follow that course of life which is best for herself and safest for those about her. "No, no," you are assured, "you don't know her sensitive nature. To tell her will be to put an end to all hope. The family understand; they will take all precautions, they will teach them to her in such a way that she may not suspect," and the delicate, sensitive girl sits shivering by the stove and takes patent medicines, and slowly dies, and the precautions are *not* carried out, and next year her only brother, the hope of the family, follows close on her heels.

There is no danger to others; tuberculosis is not contagious; these cases have not been reported, and perhaps the final cause of death was "pneumonia." And a year later the infected house poisons another innocent and unsuspecting family.

This is the path of least resistance, this is the natural course followed by our ingenuous savage, the way along which we find ourselves ever inclined to follow, and the result is, in the end, the same—*calamity.*

But little by little, laboriously through ages, humanity is learning the value and necessity of co-operation, of social and political regulation and restraint, of the necessity of the sacrifice of many individual liberties for the welfare of the whole; and while, as a rule, experience—cruel, personal experience—alone teaches the masses, yet it is perhaps true that today the public is as intelligent and as capable of profiting by the experience of others and by the researches and advice of the competent student as it ever has been in times past. The thoughtful element of the medical profession, and happily many of the public, have come to realize that dissipated individual effort cannot suffice to protect the community as it should be protected, that such protection can only be afforded by the labors of properly constituted boards of health, supported by the *united efforts of the medical profession.* And this is, I sincerely believe, our most important public duty as physicians: *thorough, cordial, intelligent support of and co-operation with our central boards of health.*

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What does such co-operation imply?

1. We should use our influence in every way to bring it about that the board itself should consist of disinterested men who are trained to or specially fitted for the essentially scientific duties of such a body. In times past there have been many men whose training has not particularly fitted them for such positions—busy general practitioners, who have yet developed into faithful and efficient health officers. There are many such in the country today. All honor to them! But with modern educational opportunities there should be no difficulty in the State and in our larger cities in finding men whose training especially qualifies them for this work. What boards of health have been in the past and still are in many localities where the appointments are made as rewards for political service or as gifts to friends it is needless to point out. And how extraordinary it is to think that individuals, a part of whom at least, are gifted with some powers of reason, should place the protection of the public health in the hands of men who have no more training in and no more idea of those measures of sanitary science which insure the safety of the public than an able seaman might have of the government of the engines of an ocean steamer.

A few days ago, in a French journal, I came across the following words, attributed to Socrates: "It is a remarkable fact that those who wish to become skilled on the lyre or on the flute, in riding or in any such exercise, work ceaselessly and undergo fatigue and suffering to learn their trade, while our great politicians who wish to govern us, fancy that they become suddenly capable of everything as it were by instinct, without study or preparation." The quotation is inexact, but the observation is singularly applicable to modern conditions.

But if the Athenian held that the art of politics could not be taught, it was not so with regard to the other arts or sciences. "When we are met together," says Socrates, "in the assembly, and the matter in hand relates to building, the builders are summoned as advisers; when a question of shipbuilding, then the shipbuilders, and the like of other arts which they think capable of being taught and learned. And if some person offers to give them advice who is not supposed by them to have any skill in the art, even though he be good-looking and rich and noble, they do not listen to him, but laugh at him and hoot him until he is either clamored down and retires of himself, or, if he persist, he is dragged away or put out by the constables at the command of the prytanes. This is their way of behaving about the arts which have professors."*

The medical profession should be the first to realize the fact that the members of boards of health should be chosen with all the care and discrimination that would be exercised in the selection of a professor in a university. That such appointments should be allowed to fall into the slough of party politics, that members of

*Plato, Protagoras: "The Dialogues of Plato," translated by Jowett, Oxford, 8vo, 1871, I, 124.

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the medical profession, without any of the necessary special training, should put themselves forward as applicants for such offices, should be abhorrent to our whole body.

This State is fortunate in possessing a Board of Health which may well be an object of pride to all. It is a competent, disinterested, eminently efficient body. It is a board in which we may trust and confide, to support which loyally we owe it to ourselves and patients.

2. The first and most essential evidence of confidence in a board of health is the *faithful and immediate reporting of all cases of communicable disease.* The only way to protect the public and ourselves is to record all contagious diseases, not only when we positively recognize them, but when we suspect their existence; to take cultures from every case suggesting diphtheria; to have examinations of the sputa made whenever we fear the presence of tuberculosis; to send to the department specimens of blood wherever there is a question of typhoid or malarial fever, to notify or confer with the Health Board concerning every case in which one suspects measles, whooping-cough, scarlet fever, chicken-pox or smallpox, yellow fever or plague.

We should remember that *it is the first doubtful case that counts,* that nearly every epidemic can be nipped in the bud, while it takes often but a fearfully short time to gain a growth which overwhelms us.

3. We should assist our boards of health in every way in carrying out proper methods of prophylaxis. What this means in yellow fever where the methods of protection are so simple and efficacious, need not be emphasized. It would have been simple enough at the outset to prevent the present epidemic by that intelligent co-operation between physician and board of health which is of such vital importance to our welfare.

One of the most serious problems with which we have to deal is in connection with typhoid fever. Here, indeed, a great field lies before us. If every instance of this omnipresent reproach to civilization were promptly recognized or suspected and reported to the authorities, the excreta carefully and systematically disinfected, and proper precautions taken by the nurses and attendants, the disease might be eradicated from our midst. Every case of typhoid fever in which the dejecta and urine are not disinfected is a menace to the community. Boards of health should distribute among the medical profession careful directions as to the proper measures of protection, and these should be carried out in every suspicious case. But more than this, we should ourselves, in our dealings with the public, use our influence constantly to bring about improvement in the sanitary conditions, in the measures which should be adopted against flies, in the proper construction and protection of outhouses, in the control of the water supply. These are questions in which boards of health may be of the greatest assistance, but where much of the burden falls upon us individually. No one of us can tell what neglected case of typhoid

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fever may be the source of an epidemic. What may be accomplished by co-operation and well-directed effort is shown by the records of several German experimental stations, where simply by instruction of the public and the carrying out of efficient measures of early diagnosis and disinfection the disease has been wiped out in various localities.

Again, nothing can be more impressive than that which has been accomplished by the Italian Society for the Study of Malaria and the various campaigns of Koch in Africa and Italy.

To report every case of tuberculosis is becoming daily of greater importance. It is but too clear that the infected house is the hotbed of the disease; that it is of vital importance for the protection of the public that the patient should be instructed as to his manner of life; that proper methods of cleaning and disinfection should be carried out, and that after the death or removal of a sufferer from tuberculosis, fitting instructions should be given to the family or to the owner or occupant of the house or room in which he has lived. Our State has an admirable and far-reaching law on this subject, formulated by the Board of Health. Every physician on reporting a case of tuberculosis, is furnished with a set of instructions as to measures required by the State—measures which are only such as we should all carry out in our practice, while all necessary implements and disinfectants are furnished gratuitously by the State. For the time and trouble required to fill out the reports which are demanded the State furnishes a slight compensation, or will, at the request of the physician, undertake these measures through the agency of the Board of Health. No breach of professional secrecy is involved in these reports, and the necessary prophylactic measures imply no unpleasant publicity. The State Board of Health is bound to accept this information as confidential, and has always done so. The information which is given in such reports is, after all, no more than that which we give every day on sending specimens of sputa for examination.

These few examples must suffice. The State Board of Health should be a vital organ which may supply to the physician throughout the State nourishment in the shape of the latest information, while it puts into his hands the power to perform invaluable services to the public and to his patients in the way of prophylaxis.

The day is sure to come when the functions of our boards of health will be much broader than they are now, when stations will be established throughout the country whose duty it will be to supply to the local practitioners the means required for earlier diagnosis, more thorough and intelligent prophylaxis, and, let us hope, ere long, for the specific treatment of many acute infections. To us, as practical physicians, the Board of Health is a right arm.

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Failure to recognize this fact and to work in harmony with the Board, an attitude of suspicion towards it, a tendency to avoid the new duties which have come upon us—these are but the outcropping of our innate tendency to seek the path of least resistance, that tendency which we share with our above-mentioned amiable savage. If we follow this path of least resistance, we cut off our main source of strength and fall, inevitably, into impotence and danger.

These are a few of the public duties which have grown upon us in late years. They are grave duties, but they are also privileges. In this age of division of labor no one of us can do all. The remote country practitioner, by careful observation and report to the central body, may prove the means of the most important and far-reaching discovery. After all, who knows which one of us may supply the vital link to the chain. Let us remember that we are all members of one organism, and to accomplish our duty to the community and to ourselves we must work together as one organism; that if, at first, it may seem that we are losing some precious individual privileges, we shall, on second thought, realize that by system and order, each working in his own field and co-operating with his neighbor in furthering the progress of the profession, we have acquired powers as a body which are of infinitely greater value to the community at large as well as to each separate member.

Thanks to the continued and faithful labors of a few of our number, and especially of that dear friend who, in his Anglican retirement, is, let us hope, adding to that inexhaustible store of youth for which he has always been pre-eminent that he may be born again at the end of his sixtieth year, we meet here today an unusually strong and harmonious and united body. There has never been a time when the members of this Faculty have had greater right to pride than today—pride in the character of our members, in the character of the work which we are doing as an organization, and, above all, in the harmony and good fellowship which prevail. But, after all, we are but beginning, and the message which I would give you today is merely to urge that individually among ourselves and among our fellows we should endeavor to cultivate yet further the spirit of unselfish co-operation for the general good which has, more than anything else, brought us the advantages which we enjoy today.

Let us make full and conscientious use of the diagnostic assistance which is offered us by the public laboratories.

Let us realize the necessity of co-operation with our State and local health departments in reporting all cases of communicable diseases and in carrying out strictly the necessary prophylactic measures.

Let us use all our personal influence to bring about improve-

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ment not only in the general public sanitation, but also in the conditions as we meet them in our own dwellings and in the houses of our patients.

And, above all, let us remember that our great strength lies in co-operation—co-operation in our work for the advancement of the medical profession; co-operation in support of the character of our central boards of health, by insisting, in so far as the power in us lies, in the separation of these bodies from politics; co-operation in maintaining the honor and usefulness and strength of this old association, through which we can accomplish the greatest good for the community and for ourselves.

THE HYGIENE AND ETIOLOGY OF TYPHOID FEVER.

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Baltimore.

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THE hygiene of typhoid fever comprises, first, the consideration of the typhoid bacillus. All parasitic diseases depend on the reaction between the parasite and the tissues of its host. The problem hence follows two general lines—first, measures designed to prevent the action upon the host by the parasite, and second, measures to render such infection innocuous if it should occur, that is, measures designed to produce a passive immunity against the disease. The ideal method of prophylaxis would be to destroy permanently and completely all the typhoid organisms, and perhaps this result is possible of accomplishment, though at the present time we may assume that every person at some time during his life will receive in his alimentary tract the organisms of typhoid fever. Therefore we must follow to a greater or less degree both of these lines of prophylactic procedures.

The typhoid bacillus is one of a class of closely-allied intestinal organisms, among which are found the colon bacillus, the bacillus enteridis, the bacillus dysenteriae, bacillus alkaligenes, and the paracolon and paratyphoid organisms. These organisms are very similar in morphology, and are differentiated mainly by the chemical reactions which they produce in their culture media. The most certain and accurate means of recognizing these organisms is by observing the effect upon them of immune bodies produced in the blood by the presence of the organism or its toxins. This reaction is important, inasmuch as it furnishes the only certain means of deciding whether or not an individual has or has had an attack of typhoid fever, and also differentiating the typhoid from the

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paratyphoid organisms, which former produce absolutely identical symptoms with the latter, excepting for the presence of a specific agglutinating reaction. A recent review in the *Journal of the American Medical Association* gives the latest and most accurate knowledge at our disposal of the morphology and characteristics of the typhoid bacillus, and I have taken the liberty of quoting this article in parts almost verbatim. The typhoid organism is a short, rod-shaped bacillus, one to three microns in length and five-tenths to eight-tenths microns in diameter. It possesses 10 or 12 flagellae, and is actively motile under proper conditions. The cultural reactions and the methods of distinguishing it from the closely-allied colon and para organisms Dr. Stokes will probably describe for you much better than I could. Certain of its properties have an important bearing on the sanitary measures directed against it, and these I will briefly review.

The typhoid bacillus does not flourish outside of the body, and when it is excreted from the body it perishes in a greater or lesser period of time, according to the medium in which it is received and other conditions, such as moisture and heat. In water or earth it has been found to live from periods of two to four weeks, from two to three months in water, some three to five months in surface earth, from 11 to 16 months in sterilized earth, 100 days in ice, from 12 to 30 days in oysters, from 50 to 80 days when dried on clothing, for three months in typhoid discharges, and for 96 days in the dead body of an experimental animal. Its vitality may be retained for many months in a dried condition. These laboratory conditions would be very discouraging if we would consider that the typhoid bacilli had their normal habitat in a similar favorable medium. As a matter of fact, it is likely that the tenure of life of the typhoid bacillus is a short and unfavorable one under the usual conditions of its saphrophytic existence. In the vast majority of instances the typhoid bacillus after passing from the human body enters into a soil very highly polluted with sewage and other organic matter, where it probably quickly perishes in its struggle for existence with the saphrophytic organisms which always abound under such conditions. The typhoid organism as a saphrophyte is relatively feeble, and is not fitted to cope in the struggle for existence with the organisms which normally grow outside of the human body. In cases where typhoid fever is endemic over an extensive period there must be repeated fresh sources of infection of the polluted media. It is a general rule with typhoid fever, as with cholera and many other intestinal diseases, that no extensive and widely-distributed epidemic can occur without pollution of the water supply. The ideal at which we must aim in the elmination of typhoid fever is the destruction of the typhoid bacillus as soon as possible after it leaves the human body and before it has a chance to enter the body of another. The only way in which this can be accomplished practically is by bedside disinfection, and it is this ideal that sanitarians dealing with

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typhoid fever attempt to reach. It may be accepted as certain that if all typhoid organisms were destroyed at the time of leaving the body of the host, typhoid fever in a short length of time would cease to exist.

The most prominent difficulties other than lack of knowledge or interest are, first, the inevitable failure in the hands of the most skilled diagnosticians to recognize all cases of typhoid fever; second, the persistence of the bacilli in the excretions during long periods of convalesence; third, the lack of a simple, safe, efficient, and certain disinfectant. The ideal method of eliminating typhoid fever must commence at the bedside, for after the organism has entered its inanimate medium, destruction of all the bacilli is difficult or impossible, especially when, as is usually the case, the organism enters the soil and later finds its way into the subsoil or ground water.

I am in a position, from the recent work of my friend, Dr. Carroll of the army, to give you something which appears to me of high importance and of very practical application on the problem of prophylaxis.

I will first briefly describe the more indirect of the general methods of prophylaxis, viz., that directed towards increasing the resisting powers of the tissues of the organism. This may be in one of two ways—either producing such a condition in the tissues that they will destroy the organisms or prevent their growth or toxic effects, or else increasing the powers of the tissues in such a way that they will preponderate in the reaction which follows when the body has become infected. The first of these methods includes the various means of producing immunity, and the second the use of antityphoid serums or any other therapeutic means which may be used to increase the bactericidal properties of the tissues.

Immunization was carried on on a large scale by Wright, a British medical officer in the Army Medical School at Netley. Dr. Wright's method consisted in the inoculation of the dead cultures of the typhoid bacilli beneath the skin of the subjects. These experiments were carried on on a large scale among the British troops transported to South Africa. It was found that his method produced a temporary immunity lasting on the average probably about six months. The history of these inoculated soldiers showed that only a relatively small number of them were attacked, and among those who were infected that the mortality was very much lower. Wright's method possessed certain disadvantages. The mere fact of the inoculation would tend to prevent persons casually exposed to typhoid fever from generally utilizing it. Again, reactions, both local and general, were frequently produced, often very unpleasant, and in a few cases actually dangerous. The local reaction consisted in pain, swelling, and edema, which were often quite persistent. The general reaction involved headache, fever,

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lassitude, and frequently a chill. Alarming prostration occurred in a few cases. These unpleasant consequences led Dr. Carroll, in his endeavor to produce an antitoxin suitable for practical use in the American army, to devise some method of more gradual immunization not necessitating the injection of typhoid toxin into the tissues. In the series of experiments which he performed in the Army Medical School in Washington the extracts of the typhoid bacilli were all administered by the mouth. He selected rabbits for his experiments on account of the natural agglutinative power of their blood. The agglutinative action of the blood upon which the Gruber-Widal reaction depends consists in the destruction of the vitality of the bacilli and a chemical change produced in their tissues by which they become adherent to one another in the form of clumps and masses, and this agglutinative, bacteriolytic power is a normal property of the human blood, but becomes highly developed during an attack of typhoid fever. It might be mentioned in connection with Dr. Carroll's experiments that immunity from typhoid fever is not due to the bacteriolytic and agglutinative power of the blood, as the blood of certain animals which are immune to typhoid fever possesses little or no agglutinative power. According to Cole's theory of immunity, the endothelial cells of the intestine develop during the attack of typhoid fever bactericidal power through which they destroy the bacteria with which they come in contact. This destruction of the bacteria liberates the endotoxin, which then calls forth the normal antitoxin of the blood.

During Carroll's experiments some 30 rabbits were used. The cultures employed were dead bouillon cultures and a dead agar cultures. Some of the rabbits were inoculated intraperitoneally with the dead bouillon culture. The vitality of the cultures was destroyed by freezing and trituration. These cultures were fed to the animals at intervals averaging about three days in from 1 to 10 c. c. doses, and in the animals thus treated experimentally a variable power developed in the blood. In one animal reactions were produced by one part of the blood in 3000 of culture. This remarkable agglutinative power is not developed in human blood even during an active attack of typhoid fever. This agglutinative power was not permanent, and fell in most of the animals after a variable period to slightly above or even slightly below normal. That these animals were actually immune was proven, however, by inoculating many of them intraperitoneally with a virulent bouillon culture of living typhoid bacillus several times greater than that required to kill a non-immunized animal.

The methods of artificial immunization have proven their value in the hands of English experimenters, and it appears to me that Carroll's method will be efficient, simple, and free from unpleasant

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consequences. His method certainly appears to me of high value in hygiene and sanitation, especially when applied to abnormally exposed or susceptible individuals, when other more direct methods are not applicable, such as soldiers in the field. The use of typhoid serums after an individual has become infected with typhoid bacilli scarcely falls within the province of hygiene and prophylaxis. The most important problem of typhoid fever from the sanitarian's viewpoint is the prevention of the entrance of the typhoid organism into the human body. This method may also be directed towards two desiderata. The first of these is the destruction of typhoid organisms; the second the elimination of all living typhoid organisms from the materials that enter the alimentary tract before ingestion.

The first or ideal condition is, as has already been mentioned, the permanent and total destruction of all typhoid organisms. This involves a very important factor and one most difficult to attain, *i. e.,* the prompt diagnosis of all cases of typhoid fever, and thereafter the prompt destruction of all typhoid discharges at the bedside. In this, as in many other infectious diseases, it is the ambulant and only slightly sick cases which are the most difficult problem to deal with. We have learned that bacilli may persist in the gall-bladder for indefinite periods, and that bacilli are frequently excreted in the urine for many weeks after convalescence. It is a matter of great practical difficulty to secure the practical disinfection of the discharges of a convalescent who has resumed his regular avocation. These cases, fortunately, are in the minority, and, fortunately also, the number of bacilli which they excrete is relatively small. In regard to bedside disinfection it must be acknowledged that the satisfactory disinfectant is yet to come. In the majority of instances, owing to the nature of the medium in which the typhoid bacilli occur, a prolonged and intimate contact with the disinfectant must be secured. Milk of lime and chloride of lime are probably effective, though their action is slow, and a relatively large quantity must always be used. Probably in camps boiling or burning might be carried out in suitable contrivances. Corrosive sublimate, which is so effective against many bacteria, has usually failed in the disinfection of typhoid discharges on account of its property of coagulating albuminoid substances. Formalin is a powerful disinfectant and very penetrating, is easily handled, and can be theoretically recommended very highly for this purpose. If bedside disinfection were always applied and always effective, there would be no necessity for considering other means directed against the typhoid organism. Bedside disinfection still lacks a general application, and even if all physicians were aware of their responsibility in this matter a certain number of ambulant cases not under medical treatment would

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escape their observation; hence in any large community we may consider the soil, the surface and ground waters to be actually or potentially infected. In other words, the typhoid bacillus we have always with us. The atrium of infection must certainly be considered in the vast majority of cases to be the intestinal tract. The theories of respiratory and other means of systemic infection are interesting, but have no proper foundation on clinical or pathological facts. The typhoid bacillus enters the system by ingestion in food or drink. As stated before, no general or widely-disseminated outbreak of typhoid fever can occur unless the water supply is infected, and even in the so-called sporadic cases water is generally at fault.

There are many difficulties in the way of estimating the relative dangers of the materials introduced into the alimentary tract, but the tabulation of a large number of cases where the sources of infection were reasonably clear, would probably show the water at fault in about 95 to 96 per cent., milk in possibly 2 or 3 per cent., ice in possibly 1 per cent., other foods in 1 per cent., oysters in possibly one-half of 1 per cent. The oyster and milk epidemics are frequently very striking owing to the large number of people simultaneously affected, yet if they were compared with the almost continuous incidence of typhoid fever caused by drinking water their number would be small.

Typhoid fever is to a certain extent contagious as well as infectious, and persons closely associated with typhoid cases, such as physicians and nurses, will develop typhoid fever in a small proportion of instances. In food or drink infection by contagion, the infectious materials are transferred by the contaminated hands or by various insects, particularly flies. The sputum in the rare cases of pure typhoid bronchopneumonia may contain bacilli in small numbers, but the problem of typhoid in large communities is certainly a problem of water supply.

Some experience with water supplies, particularly in this State, enables me to make more or less dogmatic statements concerning them. Subsoil wells and springs in towns or thickly-settled communities will practically always show the evidence of contamination by sewage, and sooner or later will contain typhoid bacilli. Artesian waters, if of sufficient depth, are usually free from both colon and typhoid bacillus if carefully protected from contamination by the surface water. The streams and rivers which flow through thickly-settled communities are also usually infected, though if the volume of water is great the virus may be present in very dilute form. The water supply of small communities is from certain points of view a more difficult problem than that of cities. In very sparsely-settled communities springs or streams may be found which are fairly free from injurious matter. It would be

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possible to cite a long list of towns in this State which use well water consisting of more or less concentrated sewage and drainage. This water is usually clear, transparent and sparkling, and owing to the organic matter which it has in solution has a very pleasant taste, and is highly extolled by the oldest inhabitant and his allies. Several of the towns possess an artesian supply which is frequently of a very high grade of purity and is very satisfactory for drinking and domestic purposes. I am inclined to believe that in these communities artesian water is the most satisfactory and economical water supply obtainable. In the cities it is, of course, not practicable, owing to the large quantity of water consumed. The experience of the American cities is leading slowly but surely to the conclusion that sand filtration on a large scale is the most practicable and efficient means of furnishing a pure water supply to the inhabitants.

The endeavor has been made for many years to secure a good water supply by attempting to purchase or control the large area comprising the watershed from which the supply is derived. If this endeavor were successful, it would have many points to justify it, notwithstanding the large expense imposed by the purchase of enormous tracts of land and of their continuous control by the sanitary authorities, but the experience of New York will serve to illustrate the almost hopeless difficulty of such an attempt. New York city ranks very high among American cities that have attempted to secure a pure-water supply by control of the watershed. Whole towns have been purchased and destroyed along the course of the Croton river, and a constant patrol is going on under the direction of the sanitary authorities, yet the efficient labor of excellent sanitarians and the enormous amount of money expended has not sufficed to produce more than a tolerable purity of the water supply.

I may mention the condition of Baltimore as a city which has, all things considered, a moderately good water supply. From the taps in Baltimore city the colon bacillus may be recovered at any time, and the typhoid bacillus has been isolated on several occasions in the laboratories of the Johns Hopkins Hospital. The most practicable plan for the water supply of large cities seems to be the collection of water of as fair a degree of purity as can be obtained, and thereafter subjecting it to slow filtration through a sand filter-bed of large area. Some means should always be taken to prevent the emptying of sewage in its raw state into rivers or lakes used as a water supply by neighboring communities. The treatment of sewage I will take up later briefly, as it has a practical application here in Maryland owing to the real or fancied infection of oysters by typhoid organisms. Milk as we at present receive it and drink it in its raw state cannot be considered a negligible source of danger. The infection of milk usually arises from careless handling or from the use of water to wash the cans which is infected by typhoid bacilli. In many cases of localized milk epidemics typhoid fever exists in the milkman's family, and the milk

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is inoculated directly by careless handling. A small number of organisms introduced into milk in this way will proliferate in this favorable culture medium at a proper temperature, and may become capable of doing damage to the large number of persons who consume the milk. Prophylaxis in milk infection should commence at the dairy, and should comprise mainly the careful washing of the cows and thorough cleansing of the milkman's hands, the use of boiling water, clean cans, and as little handling thereafter as is practicable. The icing of milk after it is collected is important for so many reasons that it should be insisted upon even if the danger from typhoid fever did not exist. The growth of the typhoid organisms is checked at temperatures between 9 and 15 degrees centigrade, a temperature which can be easily secured by the use of a moderate amount of ice, and if milk were properly collected and iced during transit the danger of infection from typhoid fever could practically be ignored. The same statements apply to ice cream, which is frozen immediately after collection.

The evidence seems to be pretty clear that oysters have occasionally caused localized epidemics, usually due to the practice of placing them near the mouths of sewers to fatten before selling them in the market. It is probable that the number of typhoid bacilli ingested by the oyster will not be sufficient to do much serious damage unless they are exposed in this way to a concentrated virus. Green vegetables may occasionally prove the source of a few cases of typhoid fever, but I cannot recall any definite cases in which the evidence is clear of this having occurred.

The quantity of water consumed plays an important part in typhoid epidemics. The minimum quantity of water consumed daily by an individual would probably not be less than three pints. These three sources are the most important with which we have to deal in the ordinary endemic and epidemic typhoids of Maryland. Contamination of foods plays an important part in the typhoid epidemics of camps and probably of country towns. Open latrines and the common housefly accounted for the widespread epidemics in the military camps at Chickamauga and in Camp Alger. Typhoid bacilli have been cultivated in considerable numbers from the legs and the bodies of flies which had alighted on the infected material, and it is very easy for them to transfer this material to food on which they alight. The particular noxiousness of the fly in this regard suggested itself to me very forcibly while I was resident in one of the general hospitals in Baltimore. The officers' dining-room is in the basement and looked out upon a small court, at the other side of which was the deadhouse and autopsy-room, and I have had the pleasure of attending many autopsies on virulent cases of typhoid fever in the company of battalions of voracious flies, and have taken my dinner a few minutes later in the society of the same equally hungry flies. The protection against this method of infection in country districts not supplied by sewerage system is very simple, and merely involves the liberal use of ashes

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or earth in the privies, screens upon the outside of the house, and a careful housekeeper on the inside. Persons living in country towns should be taught to regard their well water as a doubtless pleasant and palatable but nevertheless noxious infusion of sewage. If compelled by the force of circumstances to drink this water, 15 minutes' boiling will draw its fangs successfully, and very much more truthfully we can say of this water than of the various ardent spirits that we may consume, that it "biteth like a serpent and stingeth like an adder."

The problem of sewage disposal is closely allied with that of water supply. All sewage at one time or another finds its way into the water. It may be discharged into cesspools or other underground systems or it may flow directly into a lake or water-course.

It is possible by prolonged and expensive treatment to deliver the sewage effluent as free from noxious materials as a good quality of drinking water. This requires treatment by a coagulant, sedimentation, and filtration through a sand filter-bed such as is used to filter a city or town water supply. Usually the process of sewage disposal only aims to produce a non-putrescible and otherwise unobjectionable effluent.

The usual sewage-disposal plant comprises an aerobic tank, an anaerobic tank, and coarse-gravel "contact beds." This delivers a clear effluent, free from odor, but containing a variable number of pathogenic and non-pathogenic organisms.

The epidemiology of typhoid fever is sufficiently interesting to be briefly reviewed. The principles upon which it depends have already been considered, but each case must remain a law unto itself, and the investigation of any individual epidemic requires patience, careful attention to minutiae, and the assigning to each element its proper value, and the mental attitude of a Vidocq is more necessary in this case than in that of an Aesculapius. In certain of these cases, especially in the more or less explosive outbreaks, the source of infection is self-evident, but in many of them we have to deal with numerous possibilities, and a conclusion is only arrived at by weighing carefully all the evidence obtained. The findings in any case will have to be on circumstantial evidence. We have to judge of the infectiousness of the material which the victims have ingested by the presence or absence of the colon bacillus. The recovery of the typhoid bacillus involves such a tedious and laborious process that it is not usually practicable, and it has frequently happened that an epidemic of typhoid has plainly and unmistakably arisen from polluted water, yet the most careful efforts thereafter have failed to recover the typhoid bacillus.

In connection with the epidemiology of typhoid fever I had intended to summarize briefly some of the epidemics which have occurred in this State, but I fear that I have already trespassed too far upon your time, and will not impose upon you this subject, mainly technical in its bearings.

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Current Literature.

REVIEW IN PATHOLOGY AND BACTERIOLOGY.

Under the Supervision of José L. Hirsh, M.D., Baltimore.

THE SERUM DIAGNOSIS OF TUBERCULOSIS. H. M. Kinghorn. THE VITALITY OF THE TUBERCLE BACILLI IN THE SPUTUM. D. C. Twichell. STUDIES OF IMMUNITY IN TUBERCULOSIS; THE PROPERTIES OF THE SERUM OF THE IMMUNIZED RABBITS. Baldwin, Kinghorn, Allen. TWO EXPERIMENTS IN ARTIFICIAL IMMUNITY AGAINST TUBERCULOSIS. E. L. Trudeau. *Medical News,* September 10, 1905.

This series of papers presented before the Congress of Tuberculosis show some interesting conclusions in this field.

As a result of his studies Kinghorn concludes that in far-advanced cases with very extensive or virulent lesions the serum reaction is usually absent. The appearance of the reaction is a favorable sign. However, a certain number of favorable cases with well-marked signs of disease fail to show any agglutination. Nine out of twelve robust persons reacted to the test. Six of the nine persons were in close contact with tuberculous patients. In the tuberculous cases the average agglutinating power was 1 to 10; in the healthy the average agglutinating power was 1 to 23. As yet Kinghorn does not consider the serum test as being a sure one for the presence or absence of clinical tuberculosis.

Twichell studied the vitality of the tubercle bacilli in the sputum and made a large number of experiments under varying conditions. His results may be summarized as follows: Tubercle bacilli in sputum in paraffine bottles, placed in a dark, moist box, were alive and produced a tuberculous lesion in a guinea-pig at the end of 170 days. No tuberculous lesion was produced after 188 days. With the sputum in paraffine bottles, placed in a dark closet, a lesion resulted after 160 days, but not after 188 days. With the sputum in bottles stoppered with cotton, placed in a dark, moist box, a lesion resulted after 157 days, but not after 172 days. With the sputum in paraffine bottles, placed in the diffused light of an ordinary room, a lesion resulted after 124 days, but not after 175 days. With the sputum in ice a lesion resulted after 102 days, but

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not after 153 days. With the sputum in sand, in a moist, light place, a lesion resulted after 123 days, but not after 148 days. With the sputum in bottles stoppered with cotton in a dark closet a lesion resulted after 100 days, but not after 141 days. With the sputum in open bottles, placed out of doors in the winter months, a lesion resulted after 110 days, but not after 132 days. With the sputum in a handkerchief a lesion resulted after 70 days, but not after 110 days. With the sputum in a woolen blanket a lesion resulted after 70 days, but not after 110 days. With the sputum on wood a lesion resulted after 70 days, but not after 110 days. With the sputum in paraffine bottles in the thermostat a lesion resulted after 33 days, but not after 100 days. With the sputum on carpet a lesion resulted after 39 days, but not after 70 days. With the sputum in sand, in a dry, light place, a lesion resulted after 30 days, but not after 70 days. With the sputum exposed to direct sun rays a lesion resulted after one hour, but not after seven hours.

It appears from these experiments that the conditions most conducive to the prolonged life of the tubercle bacillus in sputum are darkness and moisture.

Baldwin, King, and Allen refer to the tuberculin-like reaction on inoculating with a virulent culture a previously-vaccinated animal—a reaction not noted on the controls. An intimate knowledge of this immunity might explain some phases of the clinical course of human tuberculosis in its relapses and pneumonic forms. Certain facts are presented relative to the phagocytosis of the tubercle bacilli as influenced by the sera of immunized and control rabbits before and after inoculation. The temperature of the vaccinated rabbits was higher for the first 10 days and of the controls during the second 10 days, after which both subsided. Agglutinin developed in the vaccinated animals far in excess of the controls, showing a specific reaction product. The vaccinated serums were usually below the controls in opsonic power from the beginning, and two pair of animals which had shown the greatest variation, when bled to death, revealed the typical differences between the lungs of the vaccinated and the controls to a marked degree. Finally, the authors state that the intense reaction seen in vaccinated rabbits was observed only in the lungs, where doubtless most of the bacilli lodge, and in a few animals the reaction was evidently followed by such lowered resistance that, instead of absorption, large caseous areas developed, much more extensively than in the controls. Thus it cannot be said that the method of vaccination always succeeds at least in destroying the bacilli and removing the tubercles, though it must be remembered that these inoculations are extremely severe conditions for animals to withstand.

Trudeau's experiments in the production of artificial immunity in small animals rested upon the fact that a human culture of

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tubercle bacilli by prolonged cultivation lost its virulence for such suspectible animals as guinea-pigs, and that its injection gave these animals a relative degree of immunity. Previous experiments had been made by the author to determine whether a living bacillus was necessary to the production of the highest degree of immunity attainable or whether dead bacilli would be equally effective. Was the immunity a result of the struggle between the living bacillus and the cell, or was it merely the chemical products of the germ which were essential to success, living or dead? Was the immunity simply a toxin immunity, or was it bacteriolytic or isopathic immunity which could be induced only by the substances resulting from the struggle between the living cells and the living but attenuated germs? The conclusions to be drawn from the experiments seem to be: 1. That dead tubercle bacilli increase, though to a very slight degree, the animal's resistance to subsequent inoculation. 2. That the living attenuated bacillus gives a stronger degree of immunity than the same bacillus killed by heat. 3. That the degree of attenuation of the bacillus used as vaccine bears a distinct relation to the degree of protection it affords in guinea-pigs to subsequent inoculation with virulent human cultures; that a culture still capable of producing a small amount of cell destruction and of spreading to neighboring inguinal nodes gives better protection than one which produces hardly any appreciable and purely localized tissue changes. 4. That cultures derived from cold-blooded animals and which grow only at room temperature, as used above, have brought about no appreciable degree of immunity. 5. The chemical changes produced in killing the bacilli by heat in the first experiment cannot wholly explain the lack of protective power of the vaccination with dead bacilli.

* * *

THE RELATION OF PLEURISY TO TUBERCULOSIS. Von Ruck. *New York Medical Journal,* September 30, 1905.

Von Ruck summarizes the chief points as follows:

1. The pleural cavities are readily accessible to bacterial invasion.

2. The great majority of pleurisies with effusion which occur in otherwise healthy individuals are due to infection with tubercle bacillus. This is proved by autopsy findings, by methods of exact diagnosis, and by the subsequent clinical histories of the majority of persons who have been the subjects of such attacks.

3. There is ample evidence to indicate that the so-called idiopathic, dry pleurisies are likewise usually tuberculous.

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4. The subjective symptoms of inflammation of the pleural apices often simulate those of myalgia or rheumatism.

5. In every case of pleurisy or of persistent pain in the chest or shoulder which cannot be satisfactorily ascribed to other causes, tuberculosis should be suspected, and a careful physical examination should be instituted to determine, if possible, the existence of a tuberculous process in the lungs or elsewhere.

6. Even if physical examination in such cases proves negative, the patient should be regarded as tuberculous until the contrary is proved, and should at least be kept under prolonged observation and re-examined from time to time.

7. The tuberculin test may be relied on to confirm or to exclude the tuberculous nature of pleurisy in case of doubt.

8. The application of these principles will often lead to an earlier recognition of tuberculous disease of the lungs especially, and to the institution of treatment at a period which will in many cases secure to the patient most important advantages in his prospects for recovery.

* * *

FURTHER REMARKS ON THE MODE OF INFECTION IN UNCINARIASIS. Claude A. Smith. *Journal of the American Medical Association,* October 14, 1905.

A specimen of feces containing an abundance of eggs of the uncinaria was mixed with some soil previously baked. After 24 hours the eggs hatched out, and the mass was applied to the skin of the wrist of a patient who at the time was in good health and whose stools showed no evidence of the infection. The procedure was repeated when the larvae were 48 hours old, and again on the third, fourth, and fifth day. Until this time there were no results. The soil was again bound on the wrist on the eighth day. Within five minutes after the soil was placed on the wrist the patient complained of a sharp stinging sensation in the area covered by the soil. After one hour the soil was removed, and on inspection the entire area was found to be decidedly reddened. After 24 hours the wrist was greatly swollen, the swelling extending downward over the back of the hand and upward a short distance over the forearm. A number of vesicles appeared, forming large blebs; itching was severe. This lasted till the eighth day. The feces were examined twice a week after beginning the experiment, but with negative results, until the middle of the sixth week after the soil was placed on the wrist; after this they were found in large numbers.

Smith thinks this experiment substantiates his previous conclusion that the infection takes place through the skin.

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PROCEEDINGS

OF THE

MEDICAL AND CHIRURGICAL FACULTY

OF MARYLAND

Editorial and Publishing Committee.

ALEXIUS MCGLANNAN, M.D. HENRY O. REIK, M.D. JOHN RUHRAH, M.D.

Secretaries of the County Societies are earnestly requested to send reports of meetings and all items of personal mention and of local or general interest for publication addressed to Dr. Alexius McGlannan, 847 North Eutaw Street, Baltimore.

A LETTER FROM THE PRESIDENT.

IN this issue of the MARYLAND MEDICAL JOURNAL will be found a copy of the two bills that have been approved and passed by the House of Delegates at its recent meeting. The Medical-Practice Act is complete. The bill as here reported for the creation and appointment of assistant county health officers merely contains the suggestions for the bill that is now being prepared for the attorney for the Faculty. The Faculty is particularly anxious to submit these bills to the members of the profession throughout the State before the arrival of the approaching election in order that they may obtain their support. I will take occasion to say here that from now on our profession must stand together as one man in matters that pertain to the general good of the profession. We must learn at once that it has long been necessary that what is for the good of the profession generally is for the good of each individual member, and that the need of harmony and unity is responsible for the small amount of influence wielded by the profession as a whole. I call upon every member of the profession throughout the State to rally to the support of this our common professional cause. The two bills asked for are conservative, and command the respectful support of all whose good they are intended to promote. I would earnestly request of every member that he

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should at once see the nominees for the legislature of each political party, state to them the provisions of these bills, tell them the members of the medical profession propose to stand together as one man on them, and the nominee who wants our support in his legislative district must promise to support these bills in the form in which they are sent to the legislature by the State Faculty.

SAMUEL T. EARLE, JR.

MEMBERSHIP IN THE HOUSE OF DELEGATES is an honor which carries with it certain obligations. Among the many not the least important is the obligation of attending the meetings of the House. Judging by the attendance at the Deer Park meeting, our delegates either entirely misunderstand the requirements of the position or are adepts at the gentle art of shirking duty. The attendance at the recent meeting of the House was most disappointing. The absentees were so many that important business was necessarily left for future consideration. The majority of the offenders were city delegates, many of whom could have attended had their interests equaled their opportunities. Our members must learn and appreciate that election to the House of Delegates is not a sinecure, but an honor which carries with it manifold responsibilities, and requires from its possessor certain duties which must be performed even at the sacrifice of personal matters.

IMPORTANT NOTICES.

THE secretary calls attention to the following statements in regard to membership privileges and dues. Nearly all the members seem to have erroneous ideas about the payment of their dues. It is hoped that these few statements will make clear the points which are most often asked about.

* * *

NOW IS the time to consider whether or not you have paid your dues to the Faculty for the past year, and also to consider the advisability of securing physicians' defense against alleged malpractice by paying for the coming year in advance. All members who pay for the fiscal year of 1906 on or before January 31, 1906, will be on the list to receive this special benefit. This alone means a saving of from $10 to $20, the price asked by the companies writing policies for this purpose.

* * *

THE dues are payable in advance, and hereafter will be for the calendar year. Dues must be paid some time during the year. If not paid within the year, the member loses his good standing and is placed on the suspended list. He may be reinstated on the payment of all back dues, but during the time in which he is in arrears

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he forfeits his membership privileges. The MARYLAND MEDICAL JOURNAL, which is sent without additional cost to each member, will only be forwarded to members in good standing.

* * *

A COMPLETE card-list of all the members of the Faculty and their exact financial standing is kept in the office of the secretary. A duplicate list of members in good standing is kept in Chicago at the headquarters of the American Medical Association. Hereafter any member wishing to join the American Medical Association will need no certificate. Application to the office in Chicago will be all that is required, as they can tell at once whether the member applying is in good standing. If you are refused admission, see if you are not in arrears for dues. If you do not get your MARYLAND MEDICAL JOURNAL or your announcements, write to the secretary and inquire if you are paid up.

* * *

SOME time during the month of December the bills for the dues for the coming year will be mailed to each city member and also to the secretaries and treasuries of the county societies. This is to permit the members to take advantage of the special benefit accorded to all members paying their dues in advance. That is the physicians' defense against alleged malpractice. All members paying before January 1, 1906, will be placed on the list of those entitled to receive this defense.

* * *

THE dues for the fiscal and calendar year of 1906 will be $7 for the city members and $2 for the county members. The county members also pay whatever additional dues are demanded by their county society for its local expenses. The small dues of the last three quarters of a year were made so to make the necessary change in the fiscal year.

* * *

THE Faculty offers more for the money than any other organization of its kind in existence. To enable us to pay for these numerous privileges the dues should be paid promptly. In every club the dues are payable in advance, and the members always pay up promptly or they are dropped. Formerly the Faculty carried a member for three years before he was dropped. The loss was enormous. Not only was the money lost, but also the member. Dues that are allowed to accumulate are hard to collect. Dues which are paid each year are a burden to no one, and, as a rule, are paid promptly. Hereafter a strict accounting will be made, and every member in arrears will be dropped. It is wrong to allow a man to have privileges for which others have paid.

* * *

A WORD ABOUT DELEGATES FROM THE COUNTY SOCIETIES.—Delegates from the county societies should bring credentials from

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their county society. A letter from the president or secretary, stating that he was duly elected and is the accredited delegate, will suffice. If the secretary was notified of his election, he will be recognized, of course, whether he brings credentials or not. An alternate should always bring credentials stating that he is sent in place of the regular delegate. At each meeting of the House of Delegates there are a number of alternates who are not properly certified. If any very important matter should come up and a close vote be polled, it might make a difference in the vote if credentials were called for before the meeting.

THE MEDICAL PRACTICE ACT.

APPROVED BY THE HOUSE OF DELEGATES OF THE MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND ON OCTOBER 12, 1905.

(1) From and after the passage of this Act no person shall practice medicine or surgery in the State of Maryland unless and until he or she shall be duly registered as a physician or surgeon in accordance with the provisions of this subtitle of this Article.

(2) Any person who shall practice medicine or surgery in this State without being duly registered in accordance with the provision of this subtitle shall be deemed guilty of a misdemeanor, and shall be fined not less than fifty dollars nor more than five hundred dollars for each offense; provided, however, that nothing herein contained shall be construed to apply to gratuitous services rendered in cases of emergency, nor to services rendered by resident or assistant resident physicians in hospitals, and students in hospitals in the discharge of their hospital or dispensary duties while under the supervision of duly registered physicians and surgeons, nor to physicians or surgeons resident in other States, Territories, Federal District or insular possessions of the United States or foreign countries when in actual temporary and occasional consultation with legal practitioners of this State, nor to commissioned surgeons of the United States Army or Navy or Public Health and Marine Hospital Service while in the performance of their official duties as such, nor to chiropodists confining themselves to chiropody, nor to midwives confining themselves to midwifery, nor to masseurs or other manual manipulators, who use no other means, nor to physicians residing on the borders of adjacent States or in the District of Columbia who are lawful practitioners in said State or District, and whose practice extends into the limits of this State, provided the said adjacent States or District of which such physicians are residents, shall accord similar privileges to lawful practitioners of medicine and surgery in this State, and provided, further, that such practitioners shall maintain no office nor meeting-place with patients to receive calls, within the limits of this State without complying with the provisions of this subtitle, and provided, further, that nothing herein contained shall annul any of the

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provisions of Article 32 of the Code of Public General Laws of Maryland, title Dentistry.

(3) Any person shall be regarded as practicing medicine within the meaning and intent of this subtitle who shall operate on or prescribe for any mental or bodily ailment of another, or who shall advertise or in any other manner announce a readiness to practice medicine, or a readiness or ability to heal, cure, prescribe for or relieve by surgical means or otherwise those who may be suffering from such ailments, or who shall open an office or make use of a sign indicating such readiness or ability, or who shall use in connection with his or her name the words Doctor, Professor, M.D., or any abbreviation thereof or synonyms therefor, either singly or together, or any other word, sign, title, letter or designation intended to represent the said person as a practitioner of medicine or surgery, or intended to represent or imply a readiness or ability to heal, cure, prescribe for or relieve the ailments of others by surgical means or otherwise, or who shall in any other manner imply or represent that he or she is a practitioner of medicine or surgery; provided that nothing in this section shall be construed as applying to any registered graduate of dental surgery lawfully practicing the same in this State under the designation or title of Dentist, Surgeon Dentist, Dental Surgeon, Doctor of Dental Surgery, or Stomatologist.

(4) From and after the first Tuesday in June, eighteen hundred and ninety-two, there shall be and continue to be two separate Boards of Medical Examiners for the State of Maryland,—one representing the Medical and Chirurgical Faculty of the State of Maryland, and one representing the Maryland State Homeopathic Medical Society of the State of Maryland. The members of said respective Boards in office on the eleventh day of April, nineteen hundred and two, shall continue to hold and exercise their respective offices up to the first Tuesday in June, nineteen hundred and two. On the first Tuesday in June, nineteen hundred and two, said two Boards of Medical Examiners shall be reorganized, and thereafter said Boards shall be constituted as follows: Each of said Boards shall consist of eight members, who shall be elected by the Medical and Chirurgical Faculty of the State of Maryland and the Maryland State Homeopathic Medical Society, respectively, at the annual meetings of the said respective societies; and each appointee is, immediately after his election, to be furnished with a certificate thereof by the society electing him. Each such member of said respective Boards, except those elected in the year nineteen hundred and two, shall serve four years, or until his successor is elected and qualified. At their respective annual meetings held in the year nineteen hundred and two each of said aforementioned societies shall elect the full number of eight examiners for its respective Board, of whom two shall be elected for four years, two for three years, two for two years, and two for one year, and thereafter two examiners shall be elected by each society in each year, as hereinbefore provided, to serve for a term of four

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years or until their successors are elected and qualified, the outgoing members to be eligible for re-election. The terms of office of all members so elected shall begin on the first Tuesday in June in the year in which they shall be respectively elected. Each Board shall have the exclusive right to examine, pass upon the qualifications of and license its own applicants. The examiners shall be physicians actually engaged in the practice of medicine or surgery in the State of Maryland, and of recognized ability and honor. No member of any medical college or university, who passes upon the qualifications of candidates for graduation of any medical school, shall be eligible to serve as a member of either of said Boards. In case of a vacancy occurring in either of said Boards, the Board in which such vacancy shall occur shall fill the same until the next annual meeting of the Medical and Chirurgical Faculty, or the Maryland State Homeopathic Medical Society, according as the Board in question may be the representative of one or other of said societies, when said society shall elect an examiner to serve for the remainder of such unexpired term.

(5) Each of the said Boards of Examiners shall meet on the first Tuesday in June in each year for the purpose of reorganization, and at such first meeting shall elect a President and a Secretary-Treasurer from its own membership, both of whom shall serve one year and be eligible for re-election, and each of the said Boards shall define the powers and duties of its own officers, except as otherwise herein provided, and each of the said Boards shall keep a record of its proceedings and shall formulate and adopt such rules and regulations, not inconsistent with the provisions of this subtitle, as it may deem necessary or proper for effecting the purposes of its organization.

(6) For the purpose of conducting examinations for license to practice medicine or surgery in the State of Maryland each of the said boards shall hold two regular stated meetings only in each year, in the months of June and December, respectively, and of each of which meetings thirty days prior public notice shall be given, provided that each of the said Boards may hold such meetings for other purposes as it may deem necessary. The results of all examinations and the action of the Boards on all applications for license or examination shall constitute a part of the official records of the said Boards and shall be kept by the Secretary-Treasurer in a book provided for that purpose, which shall be deemed and taken as evidence for all purposes of the matters therein recorded.

(7) No person shall be eligible for examination before either of the said Boards of Examiners for license to practice medicine or surgery in this State, except as otherwise herein provided, unless the said person is more than twenty-one years of age, of good moral character and habits, has received a degree in medicine from a reputable medical school or college at which he has duly matriculated and whose general and medical education is in substantial conformity with the standard promulgated by the Association of

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American Medical Colleges or the Intercollegiate Committee of the American Institute of Homeopathy, respectively, at the time of his matriculation in medicine, provided, however, that if the said person has received a degree in medicine from a reputable medical school or college in a foreign country he shall be entitled to examination, if otherwise duly qualified, if the Board before which he elects to be examined is satisfied that his education has been substantially equivalent to the standard hereinbefore prescribed.

(8) If, after investigation, either of the said Boards shall determine that the standard of efficiency in courses or equipment of any medical school or college in this State is below the standard herein prescribed, the said Board shall immediately so notify such institution in writing and shall thereafter refuse to examine its graduates until the Board is satisfied that the prescribed standard has been established, provided that nothing in this section shall be construed to apply to graduates of such institutions who matriculated therein prior to the passage of this Act, and provided, further, that either of the said Boards may require of any applicant for examination holding a degree in medicine from a medical school or college located in a foreign State an unqualified endorsement of the said school or college from the Examining Board of the State in which such school or college is located.

(9) Every candidate for examination shall file with the Secretary-Treasurer of the Board of Examiners which the said candidate may elect, at least fifteen days prior to the date fixed for the examination, an application in the handwriting of the applicant, addressed to the President of the Board, setting forth affirmatively the qualifications of the applicant as prescribed by this subtitle, and it shall be the duty of the said Boards to provide suitable blank forms of application for the use of such candidates.

(10) If for any reason the President of either of the said Boards of Examiners shall in the exercise of his judgment deem it requisite that evidence by way of affidavit or otherwise should be adduced to verify any of the allegations of any application for examination, the said Board shall within five days from the date of the filing of the said application mail notice to the applicant that such evidence is required, and upon failure of the applicant so notified to furnish such evidence within five days thereafter, or in the event that the evidence adduced be deemed insufficient, the said Board may, in its discretion, reject the said application and shall thereupon communicate the result of its action in the premises to the applicant, and such action shall be final and conclusive upon all parties.

(11) No applicant shall be examined by either of the said Boards of Examiners unless his application when forwarded to the Secretary-Treasurer of the Board before which he elects to be examined, is accompanied by a fee of fifteen dollars, which fee shall entitle the applicant paying the same to examination at the next regular meeting of the Board for holding examinations in all

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branches prescribed by this subtitle, if in the judgment of the said Board the said applicant be otherwise duly qualified.

(12) Each applicant examined by either of the said Boards of Examiners shall be first assigned a number whereby he or she shall be known to the Examiners so that the said Examiners shall remain in ignorance of the true name and identity of the said applicant until after the result of his or her entire examination shall have been determined, and any applicant attempting to disclose his name or identity to any Examiner shall forfeit his entire examination and the fee paid as hereinbefore provided.

(13) At each of its said regular stated meetings, each of the said Boards of Examiners shall conduct written examinations upon each of the following nine subjects: Anatomy, embracing general, regional and histological anatomy; Physiology; Chemistry, including organic, inorganic and physiological chemistry; Materia Medica; Therapeutics; Surgery, including general and special surgery; Practice of Medicine, including Hygiene and Medical Jurisprudence; Obstetrics, including Gynecology; Pathology, including Bacteriology. Not more than ten questions shall be propounded in each of the foregoing subjects, and the said questions shall be formulated by each of the said Boards in general meeting and each Board shall establish its own standard of requirements and its questions shall be in conformity with the tenets of the school represented by the said Board. Any applicant who has passed a satisfactory examination in conformity with the standard fixed by the Board before which the said applicant has been examined, shall be entitled to receive from the said Board a license to practice medicine or surgery in the State of Maryland.

(14) The said Boards of Examiners shall refuse to grant a license to any candidate who in examination has failed to attain the standard of proficiency established by the Board to which he has applied, as provided by this subtitle; provided that any such candidate may be re-examined by the said Board in those branches in which he has previously failed at any subsequent regular meeting for examination, upon payment of a fee of fifteen dollars for every such re-examination; provided, further, that candidates who pass a satisfactory examination in one or more branches shall be entitled to credit therefor when and as the same are passed, and shall not be required to pass any further examination in such branches.

(15) Every license issued by either of the said Boards of Examiners in conformity with the provisions of this subtitle shall be signed by the President and Secretary-Treasurer of the Board by whom it is issued, and shall have affixed thereto by the person authorized to affix the same, the seal of the Medical and Chirurgical Faculty of the State of Maryland, or of the Maryland State Homeo-

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pathic Medical Society of the State of Maryland, respectively, as may be appropriate, and every such license shall be in the following form:

BE IT KNOWN that has offered satisfactory evidence of such qualifications as lawfully entitle him to receive a license to practice medicine or surgery in the State of Maryland.

WHEREFORE and in pursuance of the power and authority vested in it by and under the laws of this State, the Board of Medical Examiners of the State of Maryland has issued this license, which when registered in conformity with the law, will entitle the said to practice medicine or surgery throughout the State of Maryland.

IN TESTIMONY WHEREOF the said Board of Medical Examiners has caused the signatures of its President and Secretary-Treasurer to be hereunto affixed with the seal of the Society represented by the said Board on this day of , in the year

And every such license shall bear a certificate in the following form at the foot thereof:

I, , Clerk of the Court of of the State of Maryland, do hereby certify that the foregoing license has been this day registered by me in the Register of Physicians and Surgeons, one of the records of my office in Liber Folio

WITNESS my hand and the seal of the Court of , this day of in the year .

(16) Every license issued by either of the Boards of Examiners to be valid, shall be registered within two years from its date in the office of the Clerk of the Circuit Court of the County of which the holder thereof is a resident or in the office of the Clerk of the Circuit Court of Baltimore City, if the holder of the said license is a resident of Baltimore City, and it shall be the duty of the Clerk of each of the said courts to register the name of the holder of each of the said licenses, the name of the President of the Board issuing the same, and the date of registration, in a book called the Register of Physicians and Surgeons, to be kept for that purpose as part of the records of his office, and the said Clerk shall certify the fact of such registration and the place and date thereof under his hand and the seal of his Court at the foot of each license so received, which certificate shall be in form as hereinbefore provided, and for the said service the said Clerk shall receive a fee of one dollar for every such license so registered in his office, to be paid by the holder thereof at the time of such registration.

(17) If any person who has been lawfully registered as a physician and surgeon in this State in conformity with the provisions of this subtitle shall subsequently remove to another County than that in which he was originally registered, or if such person hav-

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ing been originally registered in one of the Counties shall remove to Baltimore City, or having been originally registered in Baltimore City, shall remove to one of the Counties, such person shall, before engaging in the practice of medicine or surgery as defined by this subtitle in the City or County to which he has removed, file in the office of the Clerk of the Court having custody of the Register of Physicians and Surgeons in the County or City to which he has removed, a certificate signed by the Clerk of the Court in whose office he was originally registered, and under the seal of the said Court, in the following form:

I, Clerk of the Circuit Court of , in the State of Maryland, do hereby certify that appears to have been registered on the day of in the year , in the Register of Physicians and Surgeons, one of the records of my office, in Liber Folio

WITNESS my hand and the seal of the Court of this day of in the year

And the Clerk to whom such certificate shall be presented shall thereupon record the same in the Register of Physicians and Surgeons in his office in the manner hereinbefore provided for the registration of licenses to practice medicine or surgery in this State, except that the said Clerk shall record the name of the Court in which the holder of such certificate appears to have been registered in place of the name of the President of either Board of Examiners, as hereinbefore provided for the registration of licenses, and shall endorse the fact and date of such secondary registration on the back of such certificate under his hand and the seal of his Court, and for which service the said Clerk shall receive a fee of one dollar, to be paid by the holder of the certificate so registered at the time of such registration.

(18) All such records kept in conformity with the provisions of the preceding sections shall be open for public inspection under proper restriction for safe-keeping, and when used as evidence in any judicial proceeding in this State shall be entitled to full faith and credit and have the same weight and value as evidence as are accorded to the records of conveyances of land in this State.

(19) Every student of good character in attendance at any reputable medical school shall be entitled to examination before either Board of Examiners he may elect, in Anatomy, Physiology, Chemistry, and Materia Medica; provided the said student shall present to the said Board a certificate signed by the Dean of the medical school at which he is a student to the effect that the said student has completed the courses at the said institution in each of the said branches; provided, further, that the said examination shall be considered part of the final examination for license of every such student.

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(20) Nothing in the preceding section shall be construed as relieving any such student from the necessity of filing a regular application for examination and payment of the regular fee of fifteen dollars as provided by this subtitle prior to taking the said examination; provided, however, that the form of the said application may in such cases be suitably modified by the Board furnishing the same; and provided, further, that both of the said Boards of Examiners are hereby empowered to refuse the examination provided for by this section if, in their judgment, the applicant for the same has not complied with the provisions of this subtitle.

(21) Either of the said Boards of Examiners in its discretion is hereby authorized to license without examination upon payment of a fee of fifty dollars, physicians or surgeons of good moral and professional standing who are lawful practitioners of medicine or surgery in other States, Territories, the Federal District or insular possessions of the United States, the requirements of which are substantially equivalent to those of this State; provided the said States, Territories, the Federal District or insular possessions accord similar privileges to lawful practitioners of good standing in this State; and provided, further, that all such foreign practitioners have been constantly engaged in the *bona fide* practice of medicine or surgery as a profession in such other States, Territories, the Federal District or insular possessions, for at least one year prior to their application for license to practice in this State.

(22) Either of the said Boards of Examiners may license after special examination, the terms and methods of which shall be prescribed by the said Board, and upon payment of a fee of fifty dollars, legal practitioners of medicine or surgery of good moral and professional standing of other States, Territories, the Federal District or insular possessions of the United States not included within the provisions of the preceding section.

(23) All physicians and surgeons who shall have been lawfully registered in this State prior to the passage of this Act shall be deemed to be duly registered under the provisions hereof, and shall be entitled to an equal status as lawful practitioners of medicine or surgery in the State of Maryland with physicians and surgeons hereafter registered in direct conformity with the provisions of this Act.

(24) Any person actually and lawfully practicing medicine or surgery in this State as a profession and means of livelihood prior to the first day of June, eighteen hundred and ninety-two, who shall file with the Secretary-Treasurer of either of the said Boards of Examiners an application addressed to the President thereof setting forth the time, place, and circumstances at and under which he was so practicing as aforesaid, shall be entitled to receive from the said Board a license to practice medicine or surgery in this State, issued and to be registered as other such licenses are issued and registered; provided, however, that every such application shall be accompanied by a fee of fifteen dollars and be verified by the affidavits of the applicant and five other responsible persons

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residents of the same City or County; and provided, further, that no such license shall be issued unless the President of the Board to whom it is addressed is satisfied with the form thereof and of the truth of the matters therein stated, and shall approve the same in writing over his official signature; provided, further, that the said President may conduct such investigation in the premises as he may deem requisite, and upon his refusal to approve such application the same shall not thereafter be entertained by either Board; provided, further, that upon such refusal the Board with whom the said application has been filed shall return the fee paid as hereinbefore provided.

(25) Any person who shall procure his registration as a physician and surgeon by the presentation to any Clerk of any of the Courts of this State of a false or untrue license or certificate, or a license obtained by fraud or deception practiced upon one of the Boards of Examiners, shall be deemed guilty of a misdemeanor and shall be fined not less than one hundred dollars and not more than five hundred dollars, and shall forfeit all rights to practice medicine or surgery in this State.

(26) It shall be the duty of the Board of Police Commissioners of Baltimore City and of the Sheriff of each County in this State, to submit an annual report to each of the said Boards of Examiners on the first day of January in each year, containing an alphabetical list of the names and the places of residence of all persons in their respective City or County actually or ostensibly practicing medicine or surgery within the meaning and intent of this subtitle. subtitle.

(27) It shall be the duty of the Clerks of the Circuit Courts of the Counties and the Circuit Court of Baltimore City to prepare and forward to the Secretary-Treasurer of each of the said Boards of Examiners on or before the first day of January in every year, an alphabetical list of the names of all physicians and surgeons registered in their respective offices since the date of the last such report, the truth of which list shall be certified under the hand of the Clerk preparing the same, and have the seal of his Court affixed thereto.

(28) Any person practicing medicine or surgery within this State under the name of any other person, or impersonating or representing any other person at any examination for license conducted by either Board of Examiners of this State, or any person acting under the name of or as agent of any other person, persons or bodies corporate in the capacity of a practitioner of medicine, shall be guilty of a misdemeanor, and upon conviction by any Court having criminal jurisdiction in this State, shall be punished by imprisonment in the City or County jail for not less than thirty days nor more than six months, or by a fine of not less than fifty dollars nor more than five hundred dollars, or both fined and imprisoned in the discretion of the Court, and every person so convicted shall forfeit his or her rights to practice medicine or surgery in this State.

(29) If either of the said Boards of Examiners shall have in-

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formation and believe that any person has been wrongfully and improperly registered as a physician or surgeon in any book or Register of Physicians and Surgeons, kept for the purpose of such registration by any Clerk of any Court in this State, or if either of the said Boards shall, upon information, believe that any person registered as a physician and surgeon in this State, whether rightfully or wrongfully so registered, has been, subsequently to his registration, guilty of habitual drunkenness, excessive use of harmful drugs, dishonorable conduct, actual or attempted criminal abortion as defined by Article 27, section 3, of the Code of Public General Laws of Maryland, title "Crimes and Punishments," or offense involving moral turpitude, either of the said Boards may apply by petition to the Circuit Court of the County wherein any such person has been registered, or to the City Court of Baltimore City if such person has been registered in Baltimore City, setting forth the facts upon information and belief, and praying that the name of such person may be stricken from the book wherein the name of the said person has been registered, and if the said person is the holder of a license issued by either of the said Boards, also praying that the same may be surrendered to the Board by which it was issued to be canceled and destroyed; and upon the filing of any such petition the Court or one of the Judges thereof shall pass an order requiring the defendant, being the person against whom the prayer of the said petition is directed, to appear and answer the same under oath, on or before a day to be named in the order, not exceeding thirty days from the date thereof, and to show cause, if any there be, why the prayer of the said petition should not be granted; a copy of the said petition and order shall thereupon be served upon the defendant therein named, and if the said petition shall not be answered under oath within the time specified in the order, or if the answer be adjudged insufficient by the Court, then the Court shall pass a final order granting the relief as prayed by the said petition, but if the allegations of the petition be fully answered by the defendant under oath, the issues thus raised shall be heard and determined by the Court, or either party may be entitled to a trial before a jury of the regular panel empaneled to try common-law cases in said Court, and upon such hearing the Court shall render judgment, and shall pass an order, with costs, to be paid by the unsuccessful party, either dismissing the petition or granting the relief therein prayed.

(30) It shall be the duty of either or both of the said Boards of Examiners to inquire into all reported violations of the provisions of this subtitle and to institute such proceedings as, in the judgment of either of the said Boards, may be necessary or proper.

(31) Each of the said Boards of Examiners shall have full control over all funds received by it from fees and other charges authorized by this subtitle, and may make such disposition of the same in defraying the expenses of the Board, including suitable compensation to its officers and members as it may deem appropriate.

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(32) Each of the said Boards of Examiners shall make an annual report of its proceedings to, and file the same with, the Medical and Chirurgical Faculty of Maryland or the Maryland State Homeopathic Medical Society, respectively, at each annual meeting of the said Society.

AN OUTLINE OF THE ACT TO INCREASE THE EFFICIENCY OF LOCAL BOARDS OF HEALTH.

11 B. On the —— day of May succeeding the passage of this Act each of the local boards of health in this State shall appoint a group of officials to be known as assistant health officers, who shall be residents of the county in which they may be respectively appointed, and shall be legally registered physicians of this State, and whose term of office shall be for two years, unless sooner removed for cause. The number of the said assistant health officers so appointed shall be regulated as follows, viz.: One of such assistant health officers shall be appointed in counties having five election districts or under, two of such officers shall be appointed in counties having more than five and not more than ten election districts, three of such officers shall be appointed in counties having more than ten and not more than fifteen election districts, four of such officers shall be appointed in counties having more than fifteen and not more than twenty election districts, five of such officers shall be appointed in counties having more than twenty and not more than twenty-five election districts, and six of such officers shall be appointed in counties having more than twenty-five election districts. All such appointments shall be made from nominations annually submitted by the County Medical Societies organized in the respective counties and holding charters under the Medical and Chirurgical Faculty of the State of Maryland, and for every officer to be appointed the said respective Medical Societies shall annually submit the names of not less than three candidates. The districts over which the said assistant health officers shall have jurisdiction shall be assigned by the local board of health by which they have been respectively appointed, and in their respective districts they shall have and exercise authority coextensive with the local boards of health in all questions of nuisances and causes of sickness, under the immediate direction, supervision and control of the several county health officers, and they shall be accountable to the State Board of Health and subject to removal thereby in like manner and extent with county health officers, and each of the said assistant medical officers shall be entitled to an annual salary of $50, to be paid by the county commissioners of the county in which he may be appointed.

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REPORT OF A CASE OF TETANUS.

By Charles F. Davidson, M.D.,

Easton, Md.

READ AT THE 1905 ANNUAL MEETING OF THE MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND.

I REPORT this case of tetanus not only because of its severity, but because it was so promptly and satisfactorily relieved by a vigorous and, I might say, fearless use of tetanus antitoxin after smaller doses had failed to give the desired results.

Henry Trax, aged 12, was brought to my office Sunday, July 3, 1904, with left eyelid and brow swollen and red. He gave me a history of getting *poison oak* wrapped around his head three days before.

An eruption appeared two days after he came in contact with the *poison oak*, and just after the eruption appeared he went in bathing in a hole in a branch which was accessible to cattle and hogs, and where they stood and wallowed. I diagnosed *poison-oak* eruption, and gave him treatment accordingly. Monday morning, July 4, he came again with both eyelids and brows swollen and red. Tuesday at 5 A. M. I was called to see him; found front of head not so red or swollen as the day before. He had just had a chill; the temperature was 105°, pulse 120. The family said he had had three chills since midnight. I found pus above and just external to each orbit. An incision at each place let out a teacup of pus. A small soft place in the middle of forehead at the beginning of the hair was opened and another lot of pus was discharged. A flexible probe passed in this place could be felt at base of occipital bone, and I found the scalp on the whole right side of his head loose from the skull. The head was shaved, and six or eight openings were made. I began at once to use hypodermically antistreptococcic serum. That afternoon the temperature was practically normal. The next morning the temperature was up to 105°, and I found pus the whole length of left arm. Shoulder, elbow, and wrist were freely opened and a quantity of pus discharged. Twenty c. c. of antistreptococcic serum were injected four times a day during the next two days, together with stimulating and nourishing treatment, baths, etc. From then until the following Saturday, July 9, the patient did well, temperature not running above 101°. That day, which was the ninth day after the bath in the pond, while I was dressing him I noticed a peculiar contraction of the muscles of the body, and particularly those around the mouth. The nurse said she had first noticed these contractions about 12 hours before this. Just as I was about to leave the room he had a regular tetanic convulsion, lasting 10 minutes. During this he was pulseless and covered with a cold, clammy sweat. I was unable to get the tetanus antitoxin until 12 o'clock the next

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day, and by that time the patient had nine convulsions. From that time I began the tetanus antitoxin (12 o'clock on Sunday) until 6 A. M., Tuesday. I gave him 20 c. c. of tetanus antitoxin every four hours, and during that time he had seven convulsions. At 5 A. M., Tuesday, I was called, and found him in opisthotonus—pulseless, cold and clammy, every muscle in his body moving; temperature 107.4°. The nurse said the convulsion had come on at 3 A. M. I gave him 60 c. c. of tetanus antitoxin under the scapula, and in one hour after this I gave him 40 c. c. more. In one hour after this second dose the convulsion ceased, and temperature was 100°, pulse 90. At 12 o'clock that day I gave him 40 c. c. more. He had no more convulsions, and has made a slow but steady recovery.

The condition of the boy today shows the virulence of the pus. Although I discovered the pus under the scalp within 24 hours after it formed and made many incisions so that there was free drainage, yet the skull was attacked in that little while, and since his illness I have removed between 40 and 50 pieces of the external table of the skull. Pieces are still working loose. Almost every week I take out a small piece. Only one piece, however, included all three tables, and that only the size of my little finger-nail.

From the first convulsion until I began the tetanus antitoxin 24 hours elapsed, and he had nine convulsions. During the next 40 hours I gave him 20 c. c. every four hours, and he had seven convulsions. During the first 24 hours after I began to use antitoxin the convulsions were not severe and at longer intervals. After this they gradually increased, although the antitoxin was kept up until one came on that I thought must end his life; then I gave a 60 c. c. dose of antitoxin, followed in one hour by one of 40 c. c. It was then I got the happy result of no more convulsions, and from day to day I have seen my patient gradually restored to health.

THE SEMIANNUAL MEETING AT DEER PARK.

THE semiannual meeting of the Medical and Chirurgical Faculty was called to order at the Deer Park Hotel, Deer Park, Md., Thursday, September 21, at 8 P. M., by President Earle.

The program was carried out as follows:

First, a series of brief reviews of recent medical progress:

Medicine—Dr. T. B. Futcher.
Gynecology—Dr. Guy L. Hunner.

This was followed by an address by Dr. W. S. Thayer on "Some Public Duties of the Physician."

The meeting then adjourned.

* * *

The second session of the semiannual meeting was called to order at the Deer Park Hotel Friday, September 22, 1905, at 10.30 A. M., by President Earle.

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First paper on the program was by Dr. H. Cushing—"Palliative Operations for Intracerebral Tumors." Discussion by Drs. Fechtig, Wilson and Hadkins.

Dr. F. J. Kirby being absent, the next paper on the program was read by Dr. H. O. Reik—"Report of Eight Cases of Lateral Sinus Thrombosis, with a Discourse of the Advisability of Ligating the Internal Jugular Vein Before Opening the Sinus."

Dr. J. M. H. Rowland was absent, and consequently there was an omission of his paper.

The "Review on Laryngology" was read by Dr. F. D. Sanger.

By permission of the chairman, Dr. Bishop presented a short paper on "The Treatment of Typhoid Fever." Discussed by Drs. King and Naylor.

The meeting then adjourned.

* * *

The evening session was called to order at 8 P. M.

The annual address was given by Dr. Charles A. L. Reed of Cincinnati, Ohio, the title of which was "The American Family."

On motion of Dr. Thayer, a unanimous vote of thanks was accorded Dr. Reed.

President Earle then asked Dr. Reed to say a few words on the advantages of medical organization. Dr. Reed responded in a most happy vein.

On motion of Dr. Reik, a unanimous vote of thanks was accorded the Baltimore & Ohio Railroad, and especially to Mr. Burwell, manager of the Deer Park Hotel.

The meeting then adjourned.

Book Reviews.

HARRINGTON'S PRACTICAL HYGIENE. A Treatise on Hygiene and Sanitation. For Students, Practitioners, Health Officers, etc. By Charles Harrington, M.D., Assistant Professor of Hygiene in Harvard University Medical School, Boston. New (third) edition, thoroughly revised. In one octavo volume of 793 pages, with 118 engravings and 12 plates. Cloth, $4.25 net. Philadelphia and New York: Lea Bros. & Co. 1905.

The third edition of this excellent handbook, though extensively revised and considerably enlarged, makes a rather smaller volume than its predecessor, this desirable improvement being due to the use of thinner paper. Dr. Harrington's is the best book on its subject which has so far appeared in America. The appearance of a third edition in the fifth year of its life would seem to indicate that the book has been so appraised in the market.

The important chapters on Foods, Air, Soil, and Water have been carefully and judiciously revised, bringing the text up to date without materially increasing the number of pages. The chapter on Quarantine is cut to one-fourth of its former length and put at the end of the book.

New chapters on Infection and Immunity are added.

There is also a new chapter on the Relations of Insects to Human Disease.

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HEALTH AND DISEASE IN RELATION TO MARRIAGE AND THE MARRIED STATE. A Manual contributed to by Dr. C. Abelsdorf, Dr. L. Blumreich, Dr. R. Elberstadt, Dr. A. Eulenberg, Dr. C. A. Ewald, Dr. P. Furbringer, Dr. M. Gruber, Dr. W. Havelburg, Dr. A. Hoffa, Dr. R. Kossmann, Dr. F. Kraus, Dr. R. Ledermann, Dr. A. Leppmann, Dr. E. von Leyden, Dr. E. Mendel, Dr. A. Moll, Dr. A. Neisser, Dr. J. Orth, Dr. S. Placzek, Dr. C. Posner, Dr. P. F. Richter, Dr. H. Rosin and Dr. W. Wolff. Edited by Dr. H. Senator and Dr. S. Kaminer. Translated by Dr. J. Mulberg of Manchester, England. Two volumes. New York and London: Rebman Company. 1904.

The relations of marriage and the married state to health and disease involve difficult problems in almost every special field of practical medicine. In this book, for the first time, an attempt is made to assemble under the head of marriage the special information widely dispersed in the literature of disease. To do this well would be a distinct service to the medical profession, and it appears to have been well done in the manual before us.

The introduction to the work is by Professor Senator of Berlin, who also furnishes the chapter on "Constitutional (Metabolic) Diseases and Marriage." The first article (the second chapter of the book) is on the "Hygienic Significance of Marriage," by Prof. M. Gruber of Munich; a short chapter discussing the advantages of marriage, and its dangers on account of imperfect health, unsuitable age, economic conditions, hereditary defects and consanguinity. Prof. J. Orth of Berlin discusses congenital and inherited diseases and predispositions to disease, an interesting chapter and rather a long one, though devoted chiefly to the disproof of erroneous beliefs. Very interesting is the chapter by Prof. L. Kraus on "Consanguinity." The next chapter, by W. Havelburg, on "Climate, Race, and Nationality in Relation to Marriage," finishes the preliminary considerations. Prof. P. Furbringer furnishes a chapter on "Sexual Hygiene in Married Life." The eighth chapter begins the consideration of disease in its relation to marriage, with Senator's discussion of the diseases of metabolism. A chapter by Rosin on "Diseases of the Blood," one by Von Leyden and Wolff on "Diseases of the Vascular System," one by S. Kaminer on "Diseases of the Respiratory Organs," one on "Diseases of the Digestive Organs" by Ewald, and one on "Renal Diseases" by P. F. Richter bring the first volume to an end.

The second volume opens with chapters on gonorrhea and syphilis, the former by A. Neisser, the latter by R. Ledermann, who also wrote the sixteenth chapter on "Diseases of the Skin in Relation to Marriage." Diseases of the organs of locomotion are considered by Dr. A. Hoffa; Dr. G. Abelsdorf discusses diseases of the eye, with special reference to heredity; diseases of the lower urogenital organs and physical impotence are discussed by Dr. C. Posner. There are two chapters on diseases of the nervous system and insanity, the former by Dr. A. Eulenberg, the latter by Dr. E. Mendel. Perverse sexual sensations and physical impotence are discussed by Dr. A. Moll; alcoholism and morphinism by Drs. A. Leppmann and F. Leppmann, who also furnish a chapter on occupational injuries in relation to marriage. Dr. S. Placzek is the author of a very interesting chapter on "Medico-Professional Secrecy in Relation to Marriage." The twenty-eighth and final chapter is by Dr. R. Elberstadt on the "Economic Importance of Sanitary Conditions."

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OPHTHALMIC NEUROMYOLOGY. A Study of the Normal and Abnormal Actions of the Ocular Muscles from the Brain Side of the Question. By G. C. Savage, M.D., Professor of Ophthalmology in the Medical Department of Vanderbilt University; author of "New Truths in Ophthalmology," "Ophthalmic Myology," etc.

This volume is intended as a companion to "Ophthalmic Myology," published by the same author two years ago, and will prove very interesting reading to the oculist. In the previous book Dr. Savage not only described the ocular muscles and their normal physiological actions, but explained the means for detecting abnormalities of function and the treatment of heterophoric conditions. In a review of that work we were pleased to state that Dr. Savage had presented the student of muscle anomalies with the clearest and most succinct textbook on the subject. We are not sure that his latest book aids materially to make the study of muscle problems more easy. Ophthalmic neuromyology is an attempt to explain the physiologic and pathologic action of the eye muscles upon the basis of an hypothesis that there exist certain centers in the brain for the regulation of each movement of the eyes. This hypothesis can hardly be better stated than it is expressed by the author himself in the preface: "There are eight conjugate brain centers in the cortex, by means of which the several versions are effected, and one conjugate center by which convergence is caused. These conjugate centers act alike on orthophoric and heterophoric eyes and when there is only one eye. Each of these is connected with two muscles, and the work done by the center and its muscles, under the guidance of volition, is normal work. The conjugate centers have no causal relationship with the heterophoric conditions, nor have they any power for correcting them.

"There are 12 basal centers. each connected with only one muscle. If the eyes are emmetrophic-orthophoric, these centers are forever at rest, but when there is any form of heterophoria one or more of these centers must be ever active during all working hours. These centers do not cause heterophoria, but they stand ready to correct it. Under the guidance of the fusion faculty each basal center stands ready to act on its muscle whenever there is a condition that would cause diplopia. They may be called fusion centers."

Dr. Savage presents his case with so much assurance and positiveness that one almost forgets, in the reading. that the whole matter is purely hypothetical. However interesting the theory may be, we must not lose sight of the fact that it is, at best, an attractive hypothesis rather than a proven fact. The anatomical proof of the existence of such brain centers as the author refers to is not likely to be adduced at an early date, and his argument that the hypothesis becomes a scientific fact through his being able by it to explain all the phenomena of ocular muscle action will require considerable endorsement and have to contend with much criticism before it is generally accepted.

But whether Dr. Savage should prove to be in the right or the wrong regarding this matter, still he deserves the thanks of the profession for his efforts to clear up a very cloudy subject and for the amount of interest he awakens in his fellow-laborers. H. O. R.

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MARYLAND MEDICAL JOURNAL.

JOHN S. FULTON, M.D., *Editor.*

Associate Editors:

THOMAS R. BROWN, M.D. | HUGH H. YOUNG, M.D.
ROBERT REULING, M.D. | JOSE L. HIRSH, M.D.

BALTIMORE, NOVEMBER, 1905

THE PROPOSED LEGISLATION ON MEDICAL PRACTICE.

If the members of the Medical and Chirurgical Faculty will interest themselves in favor of the proposed medical-practice act, it will pass the general assembly. If the fate of the bill depends on the activity of the committee on legislation, it will fail, no matter how active that committee may be. The bill can be killed by the silence or indifference of the rank and file of the medical profession as easily as by the combined opposition of all the quacks and irregulars. As between a lukewarm advocacy with no opposition and a strong opposition with earnest advocacy, the chances of success in the latter case are much more favorable. A bill of this character can never attract the interest of a considerable group of legislators. Its intrinsic merits, however great, are not of a kind to carry it safely even through the legislative committee. Its subject-matter is strange to the average lay mind, and it is a very difficult task indeed to give such a bill an intelligent reading. One may safely predict that no more than six men in the entire assembly will read the bill carefully. Its provisions will be summarized and interpreted for the legislators either by its friends or by its enemies; if all goes well, by both its friends and enemies. The first task will be to get the bill reported by the committee to which it will have to be referred. At this stage of its progress the fate of the bill will depend on the medical profession, not of the entire State, but of five or six counties. The legislature will have been in session about two weeks before we shall know upon which counties the task will fall of getting a favorable report on the bill. If the profession in these counties will speak up promptly at the right time, the bill will not be long in committee. After the bill is reported and passed to a third reading the responsibility of its final passage by one house will rest upon the medical profession of the entire State, and if timely notice is given and prompt response follows on the part of the great body of the profession, the bill will pass one house. After that the process must be repeated in the other house. If the bill passes one house with no more than two calls for the aid of the physicians of the State, we might pause to consider whether the bill ought not to be allowed to die at that stage of the game. If no opposition appears up to that time, we may conclude that the bill is not good enough to work for. Very likely opposition will appear early and will grow stronger as the bill progresses. In any event, the second half of the game will probably be the more difficult. It will be necessary for the Faculty committee to know the status of the bill at any moment and to be informed of every movement in opposition.

Every physician who really favors the measure should expect to lend a

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hand on at least three occasions during its progress through the legislature, and should expect to do this at precisely the right movement. Every man must remember that the game is divided into halves, and that the second half is always the hotter contest.

LOCAL BOARDS OF HEALTH.

It does not seem certain that the Faculty will propose a general law to increase the efficiency of local boards of health. It is probable that the Carroll County Medical Society will seek legislation to improve the local sanitary administration. In this connection some points in the recent history of local boards of health are of interest.

In 1897 there were 15 local health officers in Maryland outside of Baltimore. The law requiring boards of health to be organized in every county had been in force for several years, but had not been generally complied with. Some of the boards of health in existence in 1897 were of little or no value. They were not intended to be useful, for this they could not be without the expenditure of money. They were organized for no better purpose than to show a formal compliance with the law. The health officers were paid at the average rate of about $25 a year. Some of them received no salary. Here and there some good work was done notwithstanding the adverse conditions. The local sanitary organization of that time was worth what it cost, or perhaps it would be better to say that the local sanitary organization cost a little less than it was worth.

In 1905 there are 23 county boards of health, having 37 medical officers, and there are 16 town and district health officers, making in all 53 local health officers outside of Baltimore. Of this number five or six receive $25 or $50 a year and four or five receive no pay at all. But the average salary of the 53 officers is about $125 a year. The number of officers has therefore increased three and one-half times in eight year, and the salary has increased five times.

In 1897 local health officers had no routine duties of any sort. There was no law on notification of infectious diseases nor any registration of births or deaths. In the absence of any alarming disease, local health officers had no official duties. In 1898 a notification law was passed, and a hygienic laboratory was established by the State Board of Health. In 1900 a registration law was passed. In this way the local health officers got routine duties of great importance, and with the activity of smallpox in the four years after 1898 were able to command somewhat better pay than formerly. Under the registration law of 1900 county health officers became local registrars of vital statistics, with the power to appoint subregistrars in each election district, and they were entitled to fees for the registration of births and deaths. There are now upwards of 450 registrars and subregistrars on the official roster of the 23 counties.

In 1902 the law on local boards of health was amended so as to extend the one-year term of office to two years and to fix the reasonable salary of health officers. Finally, in 1904, the tuberculosis laws were passed, further increasing the duties of health officers.

At every legislature substantial progress has been made, not only increasing the efficiency, but improving the economic status of the local health

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officers. It is true that the duties of health officers have multiplied much faster than his emoluments, and that those health officers who are worth any salary at all are worth very much more than they receive, but that is not the fault of the laws nor of those who have secured the passage of these laws. County commissioners have no difficulty in finding physicians who will serve as health officers at less than the authorized rates of compensation, and it is not surprising that the average salary, which should have increased twelve times in eight years, has actually increased but five or six times.

If the local societies have, in fact, such power as the improved status of professional organization is said to imply, they can raise the salaries of 22 county health officers from an average annual sum of $125 to an average of $390 by simply causing the county commissioners to levy the amount authorized by the general law on the subject.

The Medical and Chirurgical Faculty can do no more than this by an appeal to the legislature.

MR. ADAMS ON THE PATENT-MEDICINE EVIL.

Collier's Weekly is making a most vigorous attack on the patent-medicine and proprietary frauds. A series of articles by Samuel Hopkins Adams began about three weeks ago, and promises to run for two or three months. Mr. Adams has studied the subject in a leisurely manner and with great thoroughness. Mr. Adams' previous papers on tuberculosis and typhoid fever, appearing in *McClure's*, will be remembered by most physicians. In those articles it was manifest that Mr. Adams had studied his subject at first hand in many localities, avoiding no difficulty of time or distance. This thoroughness of preparation is no less evident in his articles on the patent-medicine evil, and to this, far more than to Mr. Adams' excellent gifts of expression, we must attribute the interest of what he has to say. In the issue for October 26 Mr. Adams discourses Peruna and other "hypocritical cocktails."

The fraudulent character of these preparations and of the means of exploiting them are well described both in the text and the illustrations. It is highly edifying to have the testimonial swindle exposed as Mr. Adams exposes it, showing an advertisement bearing the portraits of ministers of the gospel who believe in Peruna or in Duffey's Malt Whiskey, followed by authoritative histories of these clerical individuals. One has prostituted his ecclesiastical functions in the management of a matrimonial bureau; another is an internal-revenue collector, formerly a preacher and race-horse man; another is a very obscure cleric in a very remote hamlet who was repudiated by his church on account of the testimonial which he gave to one of these hypocritical cocktails. In a previous article Mr. Adams shows the device by which the proprietary swindler controls the daily newspapers. Physicians have often been surprised at the instant and unanimous responsiveness of the press in defense of the patent-medicine man. The secret lies in an inconspicuous clause of the formal contract for long-term and lucrative advertising. When a legislature is asked to regulate the patent-medicine evil the patient-medicine man simply calls attention to this clause in the contract. He presses the button and the presses do the rest.

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Medical Items.

BALTIMORE.

A FUND is being raised at the College of Physicians and Surgeons to put a portrait of Dr. Thomas S. Latimer in the college library.

DR. MORRIS WIENER, a distinguished German physician, scientific man and litterateur, died at his home in Baltimore on October 12 at the great age of 94.

THE third-year class, College of Physicians and Surgeons, has lost a member, Mr. Herbert Tabor, who died of typhoid fever at his home in Providence, R. I., on October 10.

THE second course of Herter lectures was delivered on Wednesday and Thursday, October 4 and 5, at Johns Hopkins Medical School by Prof. Hans H. Meyer, director of the Pharmacological Institute, University of Vienna.

A PUBLIC meeting will be held in McCoy Hall, Johns Hopkins University, on November 1 to discuss the mosquito problem. Addresses will be made by Mr. George Stewart Brown, who has been agitating the matter in the Baltimore city council during the past two years; by Mr. Homer Coffin, whom Dr. Howard Kelly engaged several months ago to study the local problem; by Professor Simons, the Maryland State entomologist, and by Dr. John B. Smith of the New Jersey agricultural experiment station.

THE American Röntgen Ray Society held its sixth annual meeting in Baltimore on September 28, 29, and 30. The presidential address by Dr. Charles Lester Leonard reviewed the 10 years' history of the Röntgen ray in medicine and surgery. Dr. Henry Hulst of Grand Rapids, Mich., read a paper on the Röntgen ray in the diagnosis of diseases of the stomach and intestines. Dr. P. M. Hickey of Detroit gave a lantern-slide demonstration of the boney development of the elbow joint. Dr. George E. Pfahler of Philadelphia discussed the interpretation of lung negatives. Dr. Baetjer of Baltimore discussed the diagnosis of thoracic aneurism. Dr. E. G. Williams of Richmond, Va., read a paper on "Regulation and Measurement of Therapeutic Dosage of the Röntgen Ray." Dr. O. S. Barnum of Los Angeles, Cal., read a paper on "The Technique of Röntgen Treatment of Keloids." Dr. Gordon G. Burdick of Chicago read a paper on the "Present Status of Radiotherapy." Dr. George C. Johnson of Pittsburg read a paper on the "Treatment of Carcinoma;" Dr. Wm. B. Coley of New York one on "Late Results in the Treatment of Sarcoma;" Dr. George H. Stover on the "Röntgen Ray in Carcinoma;" Dr. G. P. Girdwood of Montreal on "Treatment of Lupus and Rodent Ulcers." Dr. C. F. Smith, U. S. N., spoke on the "Röntgen Ray in Military Surgery." Dr. J. F. Smith of Chicago read a paper on the "Treatment of Leukemia by the Röntgen Ray," and Dr. Henry Pancoast one on the "Röntgen Treatment of Hodgkins' Disease, Leukemia, and Polycythemia." Dr. R. H. Boggs of Pittsburg read a paper on the "Technique of Calculus Diagnosis." Dr. J. Rudis-Jicinsky of Cedar Rapids, Iowa, read a paper on the "Pathological and Physiological Effects of Röntgen Rays." The next meeting will be held in Chicago.

MARYLAND.

DR. T. CHALMERS PEEBLES of Lutherville, Baltimore county, has removed to Falmouth, Mass.

THE Montgomery County Medical Society held its autumn meeting at Kensington on Tuesday, October 18. Twenty-three members were present. The afternoon session was attended by delegations from five women's clubs, who were invited to participate in a general discussion on tuberculosis after an address on that subject by Dr. John S. Fulton of Baltimore.

THE Carroll County Medical Society met at the Second Hospital for the Insane, Sykesville, on Wednesday, October 19. Luncheon was served in the administration building by the Women's Group. At the afternoon session Dr. Henry P. Hynson of Baltimore made an address on the changes in the U. S. Parmacopeia. Dr. John S. Fulton discussed the organization of local boards of health. Dr. Billingslea, the president, appointed a committee to draft a law

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to increase the efficiency of the local board of health of Carroll county. The committee includes Dr. J. C. Clark of Sykesville, Dr. Brown of New Windsor, and Dr. Foutz of Westminster. A clinic on mental diseases was given by Drs. J. C. Clark, C. S. Carey, J. N. Morris, C. T. Hill, and C. Fisher of the hospital staff.

GENERAL.

MR. W. B. SAUNDERS, the well-known publisher, died at Atlantic City on October 1.

THE New York State Medical Society and the New York State Medical Association have at last united, thus closing the most important gap in medical organization in America.

THE monkeys in Lincoln Park Zoo, Chicago, are to have the outdoor life in the hope of eradicating the tuberculosis which afflicts them. It is an interesting, but very doubtful experiment.

AT the recent meeting of the New York State Medical Association it unanimously passed a resolution calling on the committee on legislation to prepare and present at the coming general assembly a bill creating a single medical-examining board in place of the three such boards now in existence.

AMONG the American delegates to the International Congress of Tuberculosis in Paris were Dr. Henry Barton Jacobs of Baltimore, Dr. S. A. Knopf of New York, Dr. Charles Harrington of Boston, and Dr. Henry G. Beyer, U. S. N., of Washington. Dr. Wm. Osler was also in attendance.

ON October 15 the State Board of Health of New Jersey put into effect its rule excluding New York physicians from practice in New Jersey unless they are qualified by examination in New Jersey. Heretofore New York physicians have been admitted to practice in New Jersey without examination, but the New York State Regents have steadily refused to accord like privileges to physicians qualified under the laws of New Jersey.

GEORGE W. COTT, a wealthy civil engineer, recently died in New York, having bequeathed his body to a medical college "to be used in such a manner as will be most conducive to the advancements of medical and surgical knowledge." The body was accordingly delivered to the Bellevue Medical College. At autopsy it is said that the antemortem diagnosis of cholelithiasis and peritonitis was confirmed, but an unsuspected finding was the complete atrophy of the pancreas. No indication of pancreatic disease had been observed during life.

AT the second International Sanitary Conference of American Republics in Washington October 9 to 13 a convention was signed by the delegates providing for uniform quarantine regulations among the signatory governments. The articles were substantially those of the last Paris conference, the only difference being the substitution of medical observation for the surveillance practiced in Europe. The agreement is not yet binding on the governments represented, but the delegates will ask ratification by their governments. Twelve republics of Central and South America were represented.

NEW YORK CITY is preparing to spend $2,000,000 on a city sanitarium for consumptives. Last spring $200,000 was appropriated for beginning this work. The site is on Staten Island, overlooking the Narrows and the lower bay. The spot is said to be the highest on the Atlantic coast between Maine and the Gulf of Mexico. The architect is Mr. Raymond Almirall. The ward buildings will be in the form of an arc; the windows are all to extend to the floor and open on verandas. The roof is to be treated as a roof garden, one portion being enclosed in glass. There are to be two buildings devoted exclusively to the cure of advanced cases in single rooms. Patients in all stages of the disease will be admitted. The site selected is on city property, and the $200,000 already available will, it is estimated, provide accommodations for at least 100 patients.

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BERIBERI AS MET WITH IN THE PHILIPPINES.

By H. M. Cohen, M.D., Baltimore,
Late Captain and Assistant Surgeon, U. S. V.

WITH the acquisition of the Philippines and our taking over of the Panama canal the study and treatment of tropical diseases must be added to American medicine, and among the number of ailments likely to attract our greatest attention in both of these tropical countries, perhaps the one of most interest is beriberi.

This disease has already been met with extensively by American physicians in our far-off Oriental possessions, and in view of its tendency to prevail along the routes of great works of a character such as the canal project, it will no doubt be of advantage to us to know more of its nature and treatment.

Beriberi is perhaps one of the oldest diseases transmitted to us, and dates as far back as 2600 years before the present era, to which time Hwangti, in his Chinese work entitled "Neiching," is said to have traced it under the name of kiohki. In the third century the Japanese described it as kak-ke, and in 700 Sen-Kin-Ko, a Chinese writer, made mention of it. In Europe perhaps the first to study the disease was Bontius, who considered it a paralysis. Tulpius mentioned it in 1651, and later Fontana, an Italian, appears to have written learnedly upon the subject.

We find the first mention of it in the Philippines in 1745, in a work by the Spanish friar Caspar de San Agus. The Dutch in their early experiences in the East seem to have been bothered considerably with the disease, and in the early part of the nineteenth century Jachivon-Nanki, a Japanese, brought out a work which was later translated into English by Scheube, and which was no doubt the first real attempt at a scientific study of beriberi. Among the British Malcomsen, Carter, Waring, and Morehead studied it in India.

But it was not until a comparatively recent epidemic in Brazil that much progress was made, and in 1884 Lacerda, a Brazilian.

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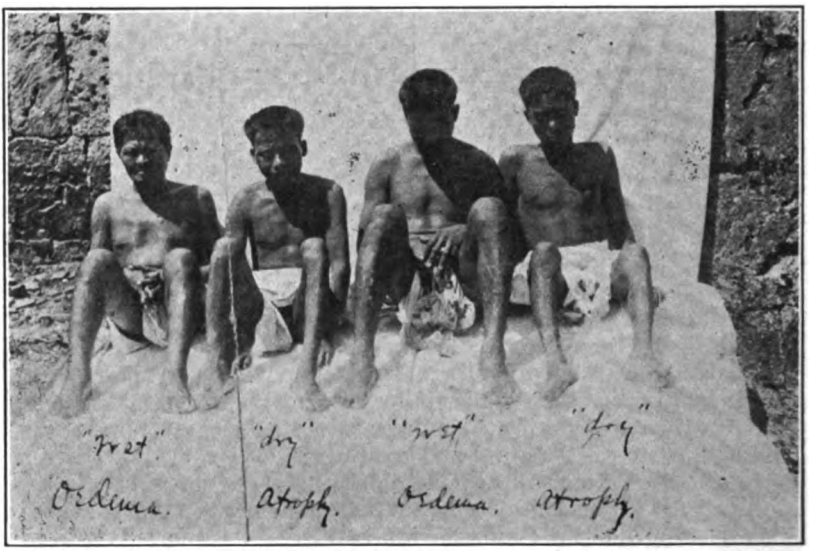
described a bacillus which he claimed was the specific organism of the disease, which, however, was quite different from the one mentioned by the Japanese Ogata. It was not until Mr. Anderson of St. Thomas' Hospital and Tokio, Simmons of Yokohama, and Scheube and Baelz, also of Tokio, took hold of the disease that it was studied by modern methods, and recent experiences by Americans in the Philippines will no doubt aid in clearing up some of the doubtful factors.

Scheube and Baelz were the first to accurately define and correctly apprehend its pathology, and they were also the first to fix the disease as being distinctly in the nature of a specific peripheral neuritis similar in many respects to that of diphtheria and alcohol,



Beriberi—Cohen.

a view confirmed by the researches of Pekelharing and Winkler, and more recently by Manson.

It is believed that Bontius gave to the disease its name, which in Cingalese signifies "debility." The Japanese *kak-ke* evidently is the transformed *kiohki* of the Chinese, which means "diseased leg." In Mauritius and in the neighboring island of Bourbon it is referred to as *barbiers*. It has also been designated as the *evil of Ceylon,* and in the Philippines it is known among the natives as *mausas*. The Cubans term it *jojola*.

Beriberi is the scourge of many countries, and takes in probably most of the tropical and subtropical belts. However, it is principally met with in the Malay and Eastern Archipelago, although it occurs also in China, Japan, India, Africa, and South and Central America. It is not unknown in Australia, and has been met with

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in epidemic form in the United States. Of pertinent interest, especially at the present time, is the extent to which it is prevalent in our own Philippines and along the course of the Panama canal.

In 1882 a severe epidemic of beriberi in Manila followed the destruction of most of the city by a cyclone, which compelled the natives to live for some weeks exposed to a continuous downpour of rain. The mortality was fearful, averaging about 60 per cent. Europeans appeared exempt, and the Chinese population suffered only slightly. In one barrio alone something like 300 deaths occurred among the natives in a few weeks.

The disease in the Philippines is endemic, but it has been noted that wherever large numbers of natives are congregated, such as in prisons, where the hygienic conditions are poor, epidemics are likely to occur. This was the case especially during the early days of the insurrection, when, owing to the large number of military prisoners, it was necessary to confine them in old Spanish forts or prisons. Dr. F. L. R. Tetamore reported an epidemic occurring at Lingayen, province of Pangasinan, in 1901 which he attributed to crowding and poor sanitation. This was also the experience of others. In this case the mortality averaged about 30 per cent.

About this time a severe epidemic occurred in the San Pedro Kotta at Cebu, an old Spanish fort, containing several hundred natives. The disease spread rapidly, and in a few weeks half the inmates were attacked. Treatment of any kind had very little effect, and the mortality was so great that it became necessary to remove those affected to tents, which action was followed by a subsidence of the epidemic. Another outbreak occurred at Tuburan, Cebu, among a company of native scouts, in which, before its advance could be checked, 50 per cent. of the command contracted the disease. In the carcel, the city prison of Cebu, beriberi was constantly present, although there was no overcrowding. This fact, no doubt, accounted for its remaining more or less isolated.

Beriberi is pre-eminently a native disease, attacking, with rare exceptions, only the natives. The average age in isolated cases is between 20 and 30 years, although this is by no means a rule. In epidemics no age seems to be exempt, Hirota reporting 52 cases in infants while being wet-nursed by beriberi mothers. It does not seem partial to either sex, but women of the working class are oftener attacked than housewives. Pregnant women are often its victims, and rich and poor are alike eligible. Men of sedentary habits seem more prone to the disease—a fact especially noted by the numerous outbreaks in jails, asylums, and schools.

Beriberi is not altogether limited to natives. Instances, though rare, are reported where Americans and Europeans were victims. An American colored soldier was attacked with the disease at Carranglan, and a white teamster had it at Tuburan. The unusualness of a case among Americans or Europeans is no doubt due in a great measure to their better hygienic surroundings.

The disease is generally divided into three general classes—beriberi atropica ("dry"), beriberi hidrops (dropsical or "wet"), and

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those in which the "wet" and "dry" combine in the same case, "mixed." The Spanish and Philippine physicians divide the disease into marasmatic, dropsical, and polisarcical beriberi.

The disease in all its forms is more or less variable, and hard and set classifications are difficult to adhere to. Late writers usually stick to its division into "dry," "wet," and "mixed" beriberi, although cases are constantly met with which refuse to come under any one of these headings.

Beriberi—Showing Helplessness of Patient.

The medical novice in the Philippines is liable to err considerably in his diagnosis at first. A man presents himself with a puffed face and neck, and a snap diagnosis of mumps is usually made; or the patient may complain of vague pains in the leg, and at once an antirheumatic is prescribed; or he may come to you pointing out a slight dropsical condition at the ankle, which may send you auscultating for a cardiac lesion. Experience soon teaches him that in more or less variable form any or all of these symptoms are in reality premonitory of beriberi.

In the epidemic at Tuburan, already mentioned, in nearly all of

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the cases the patients first noticed a slight tingling or tightening of the skin in the leg below the knee. This was either accompanied or followed by a feeling of lassitude and headache. There was, perhaps, a chill, but no fever. In a few days the ankle and leg along the course of the shinbone began to swell, and upon pressure with the finger there was well-marked pitting. This dropsical condition was usually present in both legs. Pressure upon the gastrocuemus group of muscles elicited pain. A vague, wandering pain, extending up as far as the knee, was also often manifested, and in a few instances there was a tendency on the part of the patient to limp.

These cases all recovered with but one exception, and may be considered fair examples of the disease in its mildest form.

In the epidemic at Cebu may be found examples of beriberi in its worst forms. All or some of the former symptoms were present. In many the face and neck presented a puffed, swollen appearance, and the edema of the legs and arms varied from a slight enlargement to an extensive bloating. The pain in the knee and legs had somewhat of a rheumatic character, but on pressing the gastrocuemus or biceps muscles it was often intense.

At this stage locomotion usually became difficult. The knee-jerk was absent or impaired, and there was numbness of the skin. Here the patient very likely took to bed. The swelling perhaps subsided and gave way to atrophy.

The patient perhaps went on to recovery from this stage. If not, locomotion became more difficult, paralysis having advanced. Ankle or wrist drop, or both, intervened. He soon became helpless and not able to stand or sit up. He complained of pain in the chest, palpitation, and showed signs of dyspnea. If persistent vomiting was present, it was regarded as meaning that the pneumogastric was involved, and therefore this was considered as a bad sign. There was often difficulty in swallowing, the voice became husky and even "whispering."

At this stage more than likely the case assumed suddenly a serious turn. The patient was found propped up in bed struggling for breath. His countenance was expressive of the greatest distress—eyes bulging, face purple, the arteries of his neck throbbing violently, and between gasps the unfortunate pressing his hand upon his chest in a vain endeavor to reach a horrible, piercing, tearing pain within. The patient died as if of a syncope after one of these paroxysms, or he may have had several such attacks before death occurred.

Under proper treatment few cases advanced beyond the stage of partial paralysis, and many never even reached this.

If the disease had not been checked, and was therefore permitted to run its course, I found it convenient to divide each case into three periods—first, the stage of edema; second, the stage of paralysis, and third, the stage of convalescence or death. This division was, of course, more or less arbitrary, but it was found that in many cases this rule could be applied.

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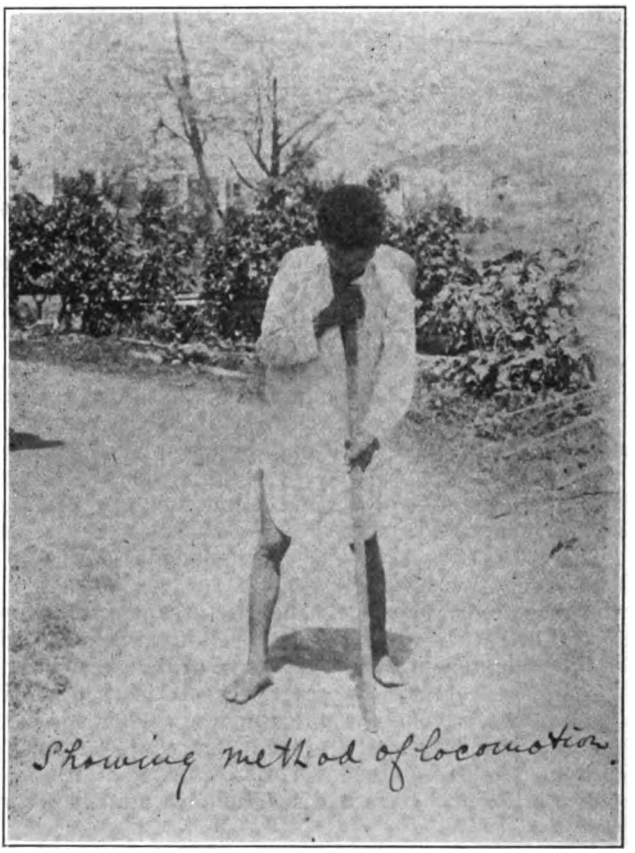
Every case within the writer's experience sooner or later presented some edema. The swelling may have disappeared and have given way to atrophy, but usually at this time paralysis was present. It is true that paralysis and edema may have been present at the same time, but in a majority of cases the greater the degree of paralysis the less edema was found. As a matter of fact, atrophy and paralysis *usually* went together. In a few instances the edema evidently covered up an existing atrophy.

"Wet" and "dry" beriberi is, in reality, one and the same disease, these terms marking different stages. Two cases hardly ever



Beriberi—Showing One Mode of Locomotion.

presented the same features, but there were certain symptoms common to all. Thus there was almost always present, or the patient had given a history of there having been, edema of the legs, arms, neck, face, or all or part of these; hyperesthesia and tingling of the skin, difficult locomotion, and, if the case had advanced far

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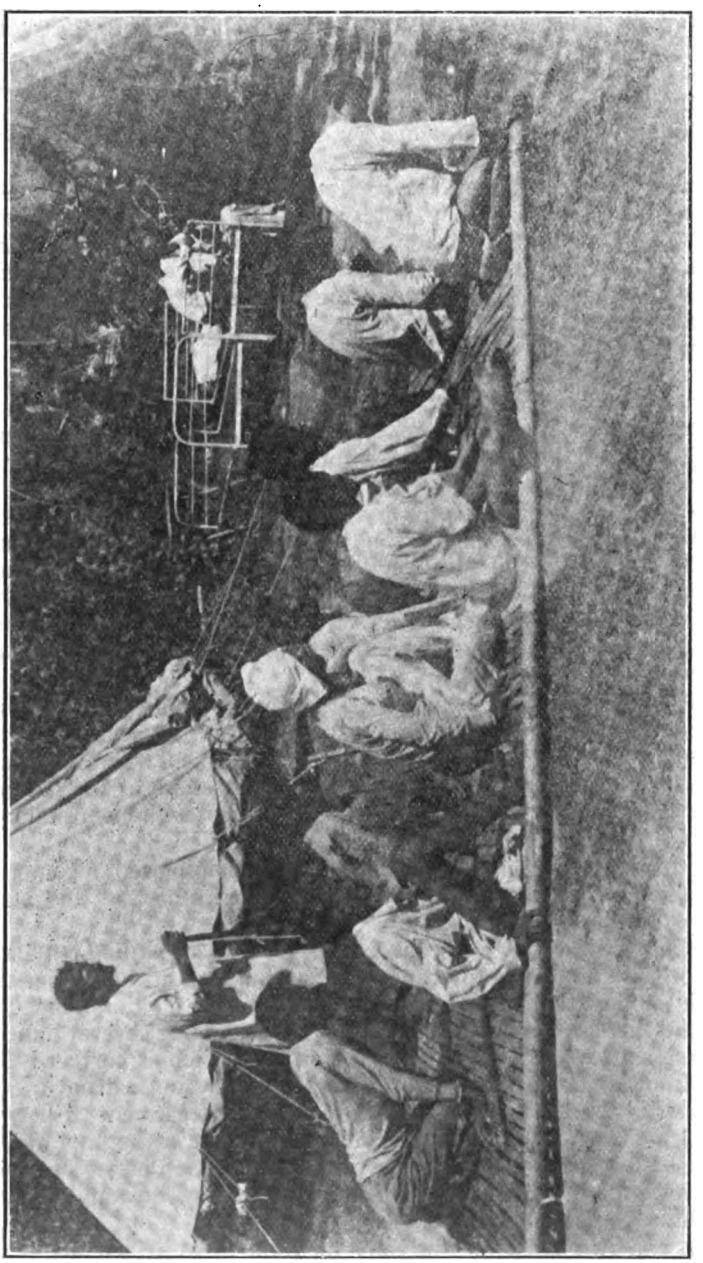

Beriberi—Showing Various Modes of Locomotion.

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enough, there was found upon auscultation a change in the duration of the heart-sounds which Manson aptly likens to the swinging of a well-hung clock's pendulum, *i. e.*, there was the same space of time between both sounds and between each succeeding heart-beat. There were also cases in which the patient was very much puffed up, and others in which the atrophy of the various muscles had almost reduced the man to a condition of skin and bones.

In all advanced cases there was impaired or difficult locomotion, which varied from a slight uncertainty of gait to an actual crawl, due to the general extension of the paralysis over the arms and legs. The patient may have had an ankle-drop, and in attempting to avoid dragging his toes along the ground, he lifted the front of the foot high before letting it fall, very much after the fashion of a rooster.

As the disease advanced he found it impossible to stand or walk without the aid of a stick. A favorite position assumed was to place the supporting stick well out in front of himself and advance by a sort of "flop-step," the right foot first, then dragging or "flopping" the left foot after it. When he could no longer stand he adopted the sitting posture, and with both hands at his sides or between his legs as a support, advanced his body, or he may have used his knees and bent-under legs as a prop, and thus advanced his body, placing his hands in front. When adopting this method his head was usually bent well over on his chest. One case found it easier to roll over and over in getting from place to place, and a few had to be carried.

A remarkable fact in many of these cases was the general absence of symptoms other than paraplegic and muscular. In the majority of them when under proper treatment there prevailed good spirits, and notwithstanding the helplessness of the patients, they laughed and joked, played cards, and those who were talented drew pictures or carved objects in wood.

Outside the edema or atrophy and the impaired locomotion, there seemed very few symptoms of importance at this stage. Fever was very rare.

I know of no other disease, except possibly syphilis or malaria, which is so amenable to proper treatment begun at the proper time as is epidemic beriberi. This statement will no doubt be challenged by many observers, but in an experience of several hundred cases I have been convinced that this conclusion is correct. I do not know that the disease is influenced by any single drug or combination of drugs. As a matter of fact, the treatment of beriberi by drugs is most unsatisfactory. Some of the symptoms may be relieved by them, but I doubt very much if, the disease once well on its course, it can be influenced by any medicinal treatment within our present knowledge.

In the two epidemics already mentioned, in which about 150 cases were handled, it was made quite clear that the very first step to be taken was the *removal* of the patient from the site occupied when attacked. If left in this place, he will very likely die. In

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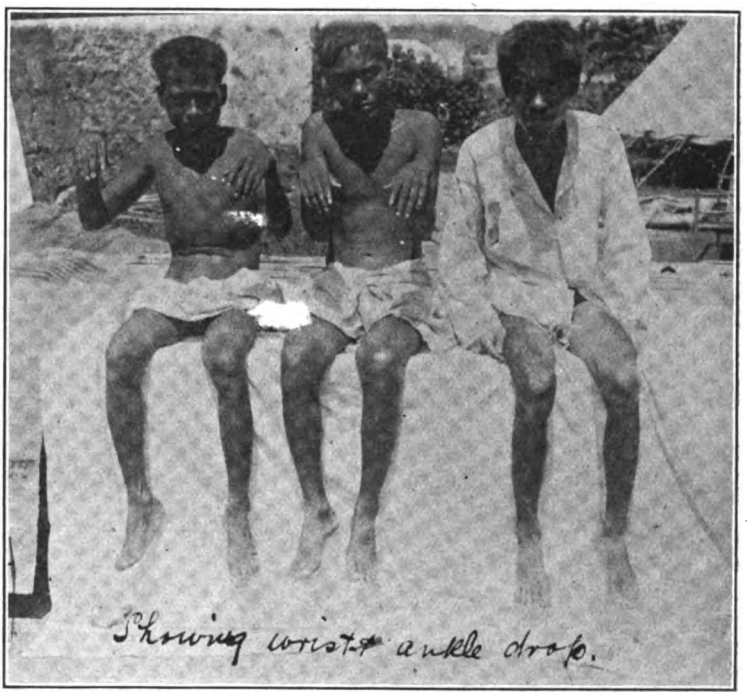
the kotta at Cebu, of the 100 natives stricken with the disease, 60 resulted fatally. The other 40 were removed in time and recovered. In the epidemic at Tuburan every case that developed was immediately removed, and 49 out of the 50 attacked fully recovered, the one fatal case not having been transferred until the disease had well developed.

If we are to accept the theory advanced by Manson, who is perhaps the greatest living authority, that beriberi is due to a germ which resides in the soil or in the houses and surroundings of beriberi spots, that it there distils a poison which, on being absorbed,



Beriberi—Cohen.

produces a neuritis, then we find a logical explanation for the appalling mortality in epidemics where those poisoned remain to absorb and reabsorb the ever-increasing toxin. We also thus find the cause for the great success experienced when patients are given an opportunity to throw off, as it were, the effects of the poison by removal to an uncontaminated spot.

In accordance with these facts, a course was adopted which gave to each patient the *greatest possible* amount of fresh air and sunshine. A camp was laid out on a dry and well-drained site, and tents put up which were supplied with floors made in two parts and of bamboo strips, to permit of easy removal and thorough ventila-

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tion. Each patient was given a thorough bath and a clean suit of pajamas. Those seriously affected were made comfortable on mattressed cots. Every morning all the patients were put out on slightly-raised platforms, and in good weather remained out most of the day. The tents were taken down daily as the weather permitted, and once a week they were pitched on a new site. Contact with the sun was encouraged, and to get the full benefit of its rays most of the patients rolled up the pajama trousers as high as possible and removed the shirt, thus exposing the greater part of the body. When the sun became too hot the patients were allowed the shelter of neighboring trees.

In this way the beriberics received the greatest possible amount of sunshine and fresh air. The siesta, or afternoon nap, so indispensable to every Filipino, was taken in the sun. The close proximity to the ground did not seem at all injurious—a result different from what is said generally to occur.

In rainy weather, of course, the patients were confined to the tents. When the rain lasted several days the cases did not seem to make any progress, although the only ill-effects noted was an increase in the rheumatic-like pains in the legs.

The diet was regulated. Following out the theory of the Japanese that rice was in some way a factor in producing the disease, this staple article of Filipino food was entirely interdicted, which was one of the greatest hardships the natives had to undergo. Bread and beans were liberally supplied instead, and fish in the form of canned salmon was furnished. Some meat was allowed, but was not relished. These articles, with some variation, formed the principal articles of diet. There seemed to exist what assumed the proportion of a craving for bananas among many of the patients, and these were allowed.

As regards medicinal treatment, it was practically all symptomatic. Where the heart needed steadying digitalis was administered. Strychnia was used to combat the atrophy. Iodide of potassium and the salicylates proved of little value. Liniments were very popular with the patients, and proved soothing to the painful muscles, but as far as could be noted the effect of any medicinal treatment was not very marked. I might mention that the natives themselves frequently tied a piece of cord or strips of bamboo skin tightly about the limb, believing that in this way the spread or extension of the disease could be prevented.

It was truly remarkable to observe the influence this open-air treatment had on the beriberics. Patients who were almost helpless when taken out of the kotta were in a short while noticed to be able to sit up. Those who could only get about in a sitting posture gradually found themselves able to partly raise themselves, to be followed shortly by an attempt at standing. From being able to get up on his feet, one would soon be seen ambling along with the aid of a stick. In less than eight weeks the worst case could get about more or less comfortably. Patients who had only a slight impediment of locomotion soon were able to walk normally.

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The edema gradually subsided in the edematous cases, and one of the last symptoms was usually the atrophy, which, although sometimes quite persistent, gradually went on to recovery.

Some of these cases extended over several months, and were finally lost track of. It can, however, be reasonably surmised that if a second exposure had not occurred the cases went on to recovery.

I cannot emphasize too strongly the value of pure air and sunshine. I believe that these were the greatest factors in their successful treatment. The marvelous improvement after a course in the open air assumed almost the proportion of a magical change, and leads one to wonder if this form of treatment, modified to suit our own climate, would not be applicable to the successful handling of other neuroses. Certainly this appears a fertile field for experiment.

THE OCCASION OF CANCER.

By A. K. Bond, M.D.,

Baltimore.

THE original cause of cancer, its infective organism if there be one, baffles investigation. We hear again and again that it has been discovered, and soon this is denied, while cancer marches on, gaining force with the growth of civilization and scattering death and a terror worse than death throughout the community. Under these circumstances it seems wise for the practitioner to leave the investigation of its fundamental cause to the laboratory worker and to turn his attention more earnestly to the occasion of the disease.

For, whatever its original *cause,* its immediate onset in each case seems to be *occasioned* by a definite physical condition. There may be exceptions, there are apparent exceptions, but in most cases there is a physical something which is within our reach.

I think we may truthfully formulate it thus: *The occasion of cancer is a long-continued local fret.*

If this is so, the combating and the prevention of that fret is the plain duty of the practitioner, as well as the instruction of the public as to this prevention. That some cancers are due to local fret is already known among the laity. The wart that is "scratched into a cancer," the chronic sore that "breaks down into a cancer" are public property. Before the practitioner can rest content, however, this public fear must be pushed very much farther, and it is for the urging of this extension that I write this article.

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The surgeon ascribes the recurrence of cancer to the fault of the practitioner in not bringing operative cases quickly enough to the surgeon. And this is true. As intelligence grows and becomes more widespread on this point cases are brought earlier and earlier to the surgeon. Of late intelligent patients themselves are refusing to delay, and at once demand surgery. The consequence is that the mortality and length of convalescence are both lessening under our best surgeons to an insignificant figure, and numbers of patients become wholly cured. There remain, however, the distress of the operation, the deformity of removal, often to sensitive women a perpetual humiliation, and the lurking dread of recurrence which must follow all but the most callous patients to the very end of their lives.

How much better it would be to *prevent* the cancer! This, I believe, we can do in a very great number of cases. It is already often done. The key to this prevention is to *protect from chronic fret!* Patients, even of cancerous parentage, should, I think, be taught that by protecting their bodies from chronic frets they can secure themselves all their lives against cancer—can be as safe from it as from smallpox, for instance.

OLD-AGE CANCERS.

It may be that this is not true of extreme old age, say after the seventieth year, when the whole body becomes feeble in its resisting power toward disease, but the cancers of extreme old age have in my experience given very little trouble to the patients. If they are not labeled with the dreaded name, many patients have practically no inconvenience from them. I refer especially to the cancer which older women most dread, that of the breast. The pain is very slight and easily controllable; the sore, if any, from breaking down easily disinfected and kept clean, and the influence on life in its comfort and duration very small.

If the dread name cancer were not attached to it, the patient would enjoy the society of her friends and hardly consider herself an invalid. In many of these cases I hardly think death, which would come in the years anythow, ought to be ascribed to the cancer. (In this article I speak generally of malignant tumors as cancers, ignoring the great subdivisions of carcinoma, etc.)

In the middle period of life, however, the diagnosis of "cancer" at once necessarily casts a cloud over the patient's life, tinging the outlook with melancholy, and making an end to all dreams of happiness and usefulness. Even the surgeon's knife cannot wholly dispel the gloom. The isolation of leprosy of old was hardly more cruel than that of the recurrent or inoperable cancer of today.

Can we not catch the sore before it becomes cancerous? Can we not remove the inflammation before it becomes malignant? I believe we can in the way I have indicated.

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FACE-FRET.

Let us consider superficial parts first. The rodent ulcer of the face is undoubtedly the outcome of chronic fret. The elderly patient feels a roughness, and scratches or rubs it. It heals with a scab, and he pulls the scab off. Day by day, and unconsciously in the night hours, he picks at it. The mosquito settles on the irritated edges as an easy blood-well, seeking night after night the same spot. By the finger-nails and other agents various irritating infections are started in it. It is never allowed to rest, and gradually the eccentric growth of its cells begins. In a former article I have indicated that a group of harsh hairs, the development of which as well as of warts is a tendency of old age, is sometimes the occasion of the rubbing and scratching.

In the *prevention* of such cancers, epilation of hairs which are irritating their sockets, excision of fretting warts, the use of bland face applications (such as thyptol), the covering of slight abrasions of the skin with soft protective plasters, the general letting alone of the face, and possibly the toning up of the skin by moderate but prolonged exposure of the face to sunlight, to the mysterious influences of its non-luminous rays—all these measures, I say, will be of great benefit.

MOUTH-FRET.

Passing now to the mouth, we observe how evidently cancer of the lip is due to pipe-fret, of the gums to tooth-fret (decayed), of the fauces to that chronic irritation which tobacco so generally keeps up there. The application of these observations to prevention needs no extensive comment—only a little common sense.

BREAST-FRET.

Breast-fret occurs in many ways. I have seen cancer in a virgin spring apparently from chronic irritation of a purse, holding coins, thrust daily into the bosom. A few women (possibly only a freak now and then) rub the breast habitually with the hand, almost automatically. A patient some time ago confessed to have rubbed several gowns through in this way. I have never detected but one or two patients in this habit, but others possibly may do it.

The corset rib is probably responsible for many cancers, being innocent enough in the upright posture, but slightly fretting the tender tissues when the body bends or twists. A patient recently presented to my examination an inflamed vein on the sternal edge of a large mamma. When I accused the buckling ribs of the corset, she showed me that in ordinary posture the sore tissue lay an inch or more above their tips, but later confessed that in bending they did fret it. Recently a patient came in with a strange soreness of the sternum to the touch. She denied that the high

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buckling steels reached the spot, but condemned her own words by wearing a pad over the epigastrium to keep the steels off that region. I lowered the steels several inches with pincers and file, and showed her how much more comfortable she was when their topgallants, so to speak, came down. She promised herself to lower the lateral whalebones, being convinced that I was right in regard to the source of the sternal and costal pains (spreading to or reflected to the regions about the breast and heart) which had baffled us both for months. I teach my patients, as far as opportunity permits me, never to allow a corset rib or buckling steel to reach the breast even when in a bending posture.

EXCISING OF SCARS.

Old scars of the breast and indurations from old lactation inflammations are, as is well known, not infrequently a cause of cancer in later life. The question naturally arises, Could these old fibrous masses not wisely be excised when middle life is well past and degenerative changes begin? Would not a clean excision of the induration, with a consequent healing by first intention, put this breast into a much safer condition? It could probably be done under cocaine with absolutely no risk to the patient.

I believe the time will come when an old scar will be removed with as little ceremony as a fretting tooth root or a fretting wart. The matter is certainly one of extreme importance, for cancerous changes in these scars sometimes begin so painlessly that, unless by accidentlly bringing her hand into contact with them in her toilet, the patient may not discover them until they have widely infected adjacent tissues.

Even if early detected and at once removed there arises the "horror of cancer" which no assurance of the surgeon can quite allay.

BRUISES.

Very often a cancer is traced back to a bruise. This is true of the breast. And it is true also of many other regions. The porcelain tub, with slippery bottom, will probably in future loom up as a cancer agent, the bruise from a sudden fall against its sides, whether upon the breast or the parts below it, being more severe than any to which we are usually liable.

Now, if bruises produce cancer after they are almost forgotten, it stands to reason that such bruises have never properly healed, whether the skin be broken or not. A further course of deduction would lead us to the belief that heavy bruises of deep tissues in persons of middle or advanced age do not receive at present the prolonged care from the physician that they deserve.

My personal belief is that most earnest care should be given to all such injuries. I think such a bruised breast should be sup-

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ported and soothed for months under the care of the physician, and that for a year or more it should not be allowed to sag down, and should be protected by an extra covering of soft material from injury and weather chill.

A somewhat similar course should be instituted with regard to all other deep bruises in patients no longer young. Many patients are abundantly willing and able to afford such medical care, and will not be frightened by a course which appeals to their common sense. In a healthy body almost any injury, no matter how severe, will completely heal under proper rest and therapeutic supervision, and the physician is guilty of a grave breach of confidence if he does not strongly urge it.

WOMB-FRET.

It is hardly necessary to urge that uterine cancer is the result of chronic fret of the tissues, usually by laceration of the cervix, in which the tender canal walls are turned out and rubbed against the vagina or pelvic walls or rectal scybala, or by irritation set up in the cavity of the uterus by remnants of decidual membranes, etc. Occasionally, it is claimed, an ill-fitting pessary may cause it. The danger of such frets is increased, of course, as the patient enters the cancer age.

The fear of cancer and the discomfort which they suffer usually drive patients with severe uterine frets nowadays early to the physician. That uterine cancer is so prevalent would suggest that physicians, either from carelessness or want of skill, do not succeed very well in a host of cases in putting the womb at rest from its frets. With the numerous unnatural methods of race-suicide in fashion at present it is not likely that the American womb is going to have a peaceful time in the near future—the long rest from irritability during pregnancy and lactation being denied it—and cancer of that organ will probably increase.

The mode of prevention of these womb-frets is very evident, but its application must wait upon greater intelligence and conscientiousness on the part of the profession and an abatement of the present demand for domestic and social luxury, both of which must necessarily be slow of accomplishment.

BOWEL-FRET.

The law of evolution which applies to cancers of other parts will, I believe, eventually be found to apply to cancers of the intestinal organs. I do not believe that they come of themselves or have their origin in mystery. Even if the germ of cancer be found, the occasion of the lesion will still need to be taken into consideration. As the tubercle bacillus or the streptococcus cannot ordinarily obtain entrance through a normal unfretted skin or mucous membrane, so the cancer germ, if there be one, cannot. Chronic

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gastric dyspepsia in some forms is well known to be followed by digestive-tract cancer growth.

Cure the dyspepsia before cancer begins, and you have no cancer. But *completely* cure it. It is the half-toned subacute or chronic irritation that begets cancer. The intenser and shorter the irritation the more chance for suppuration or subsidence. As the "little toe corn from which great aches grow" is the result of slight but frequently-repeated irritations, so is it with cancer. In both cases the fret being insufficient to cause vigorous inflammation, a slow hypertrophy of tissue occurs, and under differing conditions of tissue the toe corn and the cancer result.

In like manner, I suspect, hard fecal massing in the large bowel may in susceptible patients, after years of scybalous constipation, fret the bowel into cancer, giving in these cases perhaps too little irritation to cause ulcer. The prevention involves simply careful "attention to the bowels."

CANCER FROM TRUSS.

I may close these illustrations by reference to the case of a patient who recently developed rapid sarcoma of the testicle. The only cause I could find (for he was only 48 years of age) was that he had for a long time worn for a self-diagnosed inguinal hernia a truss over the inguinal canal. As the diagnosis of hernia was quite questionable, I suspect that the truss-fitting was equally imperfect; that if it did not directly press on the scrotal contributory parts, it at least kept the testicle congested.

CONCLUSION.

Even if some of the illustrations and principles given above should be found untrue, I believe that the need of further study in this direction is very pressing, for if my contentions *are* true the medical profession has never up to the present time been properly awakened to the early prevention of this loathsome and deadly group of diseases.

Current Literature.

REVIEW IN MEDICINE.

Under the Supervision of Thomas R. Brown, M.D., Baltimore.

BACILLURIA IN TYPHOID FEVER.

Easton (*Boston Medical and Surgical Journal*, August 17, 1905) discusses the subject of bacilluria in typhoid fever, paying especial attention to the treatment of this condition by the administration of urotropin. The subject is one of great importance, because every day it is being more recognized both by clinicians and hygienists

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that infection from the urine from typhoid patients plays a great *rôle* in the epidemiology of the disease. Perhaps it would be better to say that the danger from urinary infection in typhoid fever is being more and more recognized.

Easton first reviews the subject of typhoid bacilluria and its treatment with urotropin, quoting at some length the results obtained by Richardson, Gwyn, Chichold, Walker, Horton-Smith, Ehrmann, Gordon, Cammidge, Brown, Griffith, and others.

Richardson (*Boston Medical and Surgical Journal,* February 5, 1903) drew the following conclusions regarding the presence of typhoid bacilli in the urine:

1. Typhoid bacilli are present in about 21 per cent. of individuals affected with typhoid fever.

2. The bacilli when present are usually in pure culture, and their number is frequently enormous—many millions in each c. cm. of urine.

3. The invasion of the urine by the bacilli takes place in the latest stages of the disease. Unless measures are taken to remove the organism they persist frequently for weeks, occasionally for months, and rarely for years, and thus constitute a danger to the patient himself (cystitis and possibly orchitis and epididymitis) and, what is much more important, a grave source of danger to the public health.

4. The necessity for the rigid disinfection and supervision of typhoid urine is apparent.

5. In urotropin we have a drug which will in the vast majority of cases remove typhoid organisms from the urine not only in the cases of simple bacilluria, but also in those in which cystitis has resulted. Very rarely an obstinate cystitis may require the use of vesical irrigations; very infrequently a case will be seen in which the use of urotropin is followed by hematuria. In such cases the drug should be omitted and irrigations of the bladder substituted. The subject in its relation to the public health is of the utmost importance. In any opinion it should be a fixed rule, and one vigorously enforced, that no typhoid convalescent be discharged as well until his urine has been proved permanently free from bacilli. In this way only can we prevent a considerable percentage of our typhoid convalescents from becoming unsuspected foci for the further distribution of the disease.

Easton, to demonstrate the practical value of these suggestions, has been giving urotropin (five grains three times daily) as a routine measure of treatment in typhoid at the Massachusetts General Hospital, the drug being omitted as soon as convalescence was established. In 46 of these cases repeated examinations of the urine were made from six to ten days after the discontinuance of the drug, and in none of these cases was there any growth of typhoid bacilli. In one of these cases the patient had a relapse of

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the fever, and coincidentally with this the bacilluria returned.

Ten patients who had been treated by this method and discharged were examined the year subsequently, and in all cases the urinary examination was negative.

As to the toxicity of urotropin and the unpleasant effect which may be due to it, Easton has analyzed the 486 cases of typhoid fever in which urotropin was administered at the Massachusetts General Hospital. Most of these cases received from eight to ten grains three times daily, yet there were but three cases of painful micturition and two of hematuria.

Easton, from a consideration of the cases in the literature as well as his own long series of cases, draws the following additional conclusions:

1. Although urotropin may in very rare cases cause uncomfortable symptoms, it does not invalidate the use of the drug.

2. Urotropin is of less value in cases where an active inflammation of the bladder has occurred.

3. But as far as this series of observations goes the moderate use of urotropin throughout prevents cystitis.

4. Finally, the routine administration of the drug in all cases of typhoid fever would seem to be strongly indicated, for by such a course of treatment bladder complications are avoided, the urine made innocuous to those brought in contact with the patient, and it is possible to discharge patients who have been sick with typhoid fever in full belief that as far as the urine is concerned they will be harmless to the community.

* * *

THE CLINICAL EFFECTS OF ETHER ANESTHESIA ON RENAL ACTIVITY.

Pringle and Maunsell (*British Medical Journal,* September 9, 1905) give the results of their investigations undertaken with the object of determining clinically the influence of ether anesthesia on the secretion of urine, both as regards its quantity and its nitrogenous contents. The periods in which these determinations were made were: 1. Twenty-four hours, ending at 9 A. M. on morning of operation; 2. From 9 A. M. on the morning of operation till immediately preceding the administration of the anesthetic; 3. During the induction of anesthesia, ending with the abolition of corneal reflex; 4. First half-hour of complete anesthesia; 5. Second half-hour of complete anesthesia; 6. Third half-hour of complete anesthesia; 7. Six hours following anesthesia; 8. Twenty-four hours following Period 7.

The bladder was emptied by catheter at the end of each period, and cases were purposely selected of such a type as to obviate as far as possible any special influence of the operation. All the cases ran an aseptic course, and the urine tested before operation in each case was normal.

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As regards the quantity in the various periods, taking the amount passed during Period 1 as the normal rate of secretion, the amounts passed during the various periods calculated in c. cm. per half-hour were as follows: In all cases but one there was an increase during Period 2 accounted for by the nervous condition of the patient preceding operation; in Period 3 there was in some cases an increase, in some cases a decrease, these results agreeing with those obtained experimentally on dogs; in Period 4 all cases showed a marked decrease, the average rate of secretion being only 23 per cent. of normal; in Period 5 the average was only 13 per cent. of normal, and in Period 6 the rate shows a further decrease; in Period 7 the rate of secretion again rises, but it never reached normal, while in Period 8 a slight decrease in secretion was met with in every case. In the last period the small amount of fluid taken and the amount of fluid lost by vomiting may have had some influence on this diminution of secretion.

As regards the secretion of total nitrogen, which was determined in all cases by the Kjeldahl method, the following results were obtained: In Period 2 all cases but one showed an increase in nitrogenous excretion; in Period 3 there is in some cases an increase and in others a decrease, the average, however, being a considerable increase; in Period 4 there is a marked decrease in every case, the average being only 22 per cent. of normal; in Period 5 being but 11 per cent. of normal, while in Period 6 it is only 2.2 per cent. of normal; in Period 7 the rate of nitrogenous secretion again rises, the average being 64 per cent. of normal, while in Period 8 the average is 84 per cent. of normal.

These results agreeing, as they do, with those obtained on dogs by Thompson (*British Medical Journal*, March 25, 1905), show the marked effect which ether exerts upon the secretion of urine as regards quantity as well as nitrogenous constituents. The condition of renal activity appears to increase the longer the anesthetic is continued, and this, in turn, must exert a markedly deleterious effect upon the general metabolism and condition of the patient.

* * *

HICCOUGH.

In a recent number of the *Medical News* is found an interesting review of an exhaustive essay on this subject by Bertier published in the *Gazette des Hôpitaux* July 8, 1905, the complete bibliography of the subject being carefully considered and digested. Bertier enumerates the following clinical forms: A. Reflex. (1) Diseases of the stomach: liquids too hot or too cold, unchewed food, carbonated liquids, indigestion. It may be a troublesome accompaniment of cancer, ulcer, and hyperchlorhydria. In nurslings it indicates an overloaded stomach. (2) Affections of the pharynx, aphthae, abscess, esophageal spasm due to benign or malignant stric-

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ture. (3) Diseases of the peritoneum. Every time the peritoneum is irritated hiccough is apt to arise. It is less constant in the localized varieties. (4) Intestinal disorders, including dysentery, lumbricoides. (5) Diseases of the liver. (6) Diseases of the spleen, most frequently hypertrophy. (7) Genito-urinary disorders; above all affections of the bladder. (8) Uterine disorders. (9) Pregnancy; in this case due to toxemia, like vomiting. (10) Abdominal wounds. (11) Diseases of the respiratory organs, particularly diaphragmatic pleurisy and pneumonia. In the former it is the source of agonizing pain. It is seen in subphrenic abscess. In pneumonia it occurs on the fifth or sixth day, and is ordinarily very violent. (12) Mediastinal compression. (13) Pericarditis, in which it is a bad symptom. (14) Exposure to cold. (15) Affections of the peripheral nerves, as in sciatica. (16) Spinal disorders, as displacement of cervical vertebrae. B. Hiccough of central origin. (1) Hysteria. (2) Emotion; seen in neuropathic subjects, transitory, and sometimes occurring in the course of laughing or crying, when it is really a sobbing. (3) Chorea and epilepsy. (4) Intoxications; lead colic, nicotinism, alcoholism. (5) Autointoxications, as uremia. (6) Infections. The hiccough of typhoid fever has been most studied. Hiccough is also seen in scarlatina, scurvy, yellow fever, cholera, and hydrophobia. (7) Cachexias. (8) Hemorrhages. (9) Death agony. (10) Bulbar diseases. (11) Cerebral affections.

In treatment the following have been used: A. Medicinal: Injection of morphine, valerianate of zinc, belladonna and camphor, belladonna plaster over the phrenics, bromides and belladonna, opium and chloroform, inhalations of chloroform, ether injection of pilocarpine, infusions of peppermint, musk, theriac and belladonna, cocaine and belladonna. B. Non-medicinal: (1) Peripheral irritation, causing inhibition of the motor phenomena. For this purpose the following have been used: Epigastric acupuncture, tickling of the pharynx, compression of the auditory meati with extension of the head, actual cautery, chloroform compresses on the epigastrium, epigastric ether pulverizations, raising of the hyoid bone, drinking slowly while pinching the nose, sinapisms, vesicatories, catheterization of the esophagus, tetanizing galvanization of the esophagus, pharyngeal irrigations with cold water, compression of the fists, compression of the cubital region, compression of the ball of the thumb with the little finger, a little salt or vinegar placed on the tongue, and thrusting the tongue systematically out of the mouth. (2) Increasing the oxygenation of the blood by means of 40 to 50 rapid and deep respirations. (3) Direct action on the phrenics; compression, galvanism, vesicatories. (4) Magnetism, applied to lower part of thorax. (5) Mechanical interference with movements of diaphragms; forcible manual compression of the diaphragm, forced expiration or inspiration, abdominal bandage, and suspension of respiration. (6) Cold baths and wet packs. (7) Suggestion in all its forms.

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PROCEEDINGS

OF THE

MEDICAL AND CHIRURGICAL FACULTY

OF MARYLAND

Editorial and Publishing Committee.

ALEXIUS MCGLANNAN, M.D. HENRY O. REIK, M.D. JOHN RUHRAH, M.D.

Secretaries of the County Societies are earnestly requested to send reports of meetings and all items of personal mention and of local or general interest for publication addressed to Dr. Alexius McGlannan, 847 North Eutaw Street, Baltimore.

NOTICE TO COUNTY SECRETARIES.

THE publication committee is very anxious to have notices of the meetings of the county societies published in each number of the JOURNAL. To this end we ask again every secretary in the State to send in a report of each meeting of his society. These reports need not be very long, but should state the time and place of meeting, together with the program and discussions, and also a note of any changes in membership or officers.

Reports of this nature would add greatly to the interest of the section devoted to the affairs of the Medical and Chirurgical Faculty. The members of one county society would thus be enabled to see what their neighbors were doing, and a new interest thus be added to the important work of keeping the societies active and up to date.

A report of this kind could easily be written while the secretary was listening to remarks or papers, and would not take up any of his time outside of the meeting. We should also like to have the cards announcing meetings. We cannot always print notices of meetings in advance, as the material for the JOURNAL must be handed to the printer on the tenth of the month preceding the appearance of the publication. Such notices would, however, enable us to keep informed as to what the component societies were doing.

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A REPORT OF EIGHT CASES OF LATERAL SINUS THROMBOSIS, WITH SPECIAL REFERENCE TO THE ADVISABILITY OF LIGATING THE INTERNAL JUGULAR VEIN PRELIMINARY TO OPENING THE SINUS.

By H. O. Reik, M.D.,

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READ AT THE SEMIANNUAL MEETING OF THE MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND, AT DEER PARK, SEPTEMBER 22, 1905.

INFECTIVE thrombosis of the lateral sinus is, like appendicitis, and in the same sense, a recently-discovered affection. The text-books of 20 years ago contained no allusion to it. One of the standard works of 10 years ago refers to the fact that such a complication may arise in the course of mastoiditis, and that there is a possibility of removing the clot by operation, but advises great caution, and gives evidence of the author's respect for so large a blood-vessel. Zaufal, in 1880, was the first to suggest deliberate exposure of the sinus for removal of an infected clot, and four years later he had the first opportunity to perform the operation he had recommended. The first operative case recorded in the transactions of the American Otological Society was related by Dr. Sutphen in 1892. Since that date there has been a rapid growth in the literature upon this subject and an annually increasing number of cases reported as successfully operated upon, and today the question is not upon the advisability of operating, but how early can the disease be recognized and how thorough shall be the operative measures.

It is my intention to consider in this paper one aspect of the question only and to relate my personal experience to illustrate one point, especially, in the operative technique. During the past five years there has been considerable discussion concerning the advisability of making ligation of the internal jugular vein a part of the operation for relief of this condition. A careful study of the published cases, as well as personal experience, leads me to hold very strongly to the view not only that jugular ligation is an essential part of the operation, but that it should be done in every instance preliminary to attempted removal of the thrombus.

Before stating my reasons for this conclusion let me refer very briefly to the pathology and symptoms of lateral sinus thrombosis, in order that the clinical picture of the disease may be placed before you as I see it.

Migrating suppurative otitis media is the most common cause of thrombus formation in the lateral sinus, and the portion of that

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vein in which the clotting most frequently commences is the sigmoid curve, lying at the inner aspect of the mastoid process in close proximity to the posterior mastoidal cells. Infection of the vessel wall may take place by direct communication through the canaliculi joining the mastoid cells and the erosion of intervening bone, or through extension of phlebitis from the small veins of the tympanum or antrum. In the majority of instances the sinus is invaded only after a prolonged direct attack upon its thick coat by a purulent process which has demolished the cellular structure of the mastoid, for not only is this the condition usually found when investigating a thrombosed sinus, but very frequently in simple mastoid operations the vessel is found to be exposed and bathed in pus, but not yet penetrated. The dural covering of the sinus is a very resistant tissue, but, of course, must give way before a virulent organism or a continued attack of a less caustic enemy. When the vessel wall is inflamed its intimal cells are soon infiltrated, and become irregular in outline or undergo desquamation, so that the smoothness of surface normally presented to the blood-stream is destroyed. At such a point clotting may readily commence, and as the inflammation is bacterial in origin the thrombus quickly becomes an infected one.

Among the many skilled observers and excellent surgeons who have painstakingly studied the problems connected with lateral sinus thrombosis and who have contributed to our knowledge of the subject none have done more towards enabling us to understand the pathology of the affection and to recognize its symptoms than Macewen* and Whiting.† Whiting's division of the condition into three distinct stages, based upon well-defined pathologic changes so succinctly set forth in Macewen's work, affords a clear understanding of the situation and a classification that is helpful in determining the prognosis and treatment as well as diagnosis.

According to Whiting "the course of sigmoid sinus thrombosis may be conveniently designated for purposes of clinical classification as comprising three stages, characterized by local and systemic manifestations: First stage, the presence of a thrombus, parietal or complete, not having undergone disintegration, and accompanied by slight or moderate pyrexia, rigors being usually insignificant or absent; second stage, the presence of a thrombus, parietal or complete, which has undergone disintegration, with resulting systemic absorption, characterized by frequent rigors and pronounced septico-pyemic fluctuations of temperature; third stage, the presence of a thrombus, parietal or complete, which has undergone disintegration, with systemic absorption, accompanied by rigors, rapid and great fluctuations of temperature, and central or peripheral embolic metastases, terminating usually in a septic pneumonia, enteritis, or meningitis."

The diagnosis in this first stage is not easily and surely made

*"Pyogenic Diseases of the Brain and Spinal Cord," 1893.

†*Archiv. Otology*, 1898, Vol. XXVII, pp. 26-71 and 506.

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prior to opening of the mastoid cells. The detection of a thrombus so soon after its formation has most frequently happened during operations for mastoiditis and when the pursuit of carious fistulae or the removal of granulation tissue and necrotic bone has caused the operator to expose the sinus and disclose its abnormal condition. The symptoms occurring in association with mastoiditis which should cause one to suspect interference with the sinus are hemicrania, radiating over the entire side of the head, but not necessarily of a severe nature; tenderness in the upper part of the posterior cervical triangle and along the course of the mastoid emissary vein, and edema of the neck in these regions. None of these symptoms are so marked in degree as they will be in the second stage, but the fact of their existence at all should arouse suspicion regarding the state of the sinus.

The pathologic boundary line between the first and second stages has been described as the point at which septic disintegration of the thrombus begins, and the clinical separation is based upon the apparent consequences of dissemination of this infected material. It is upon the recognition of the transition between these two stages that successful treatment depends, and a watchful eye should be kept for the earliest appearance of septic absorption. A sudden chill is usually the first manifestation of septic absorption, and then follows the essential symptoms of blood poisoning of microbic origin; characteristic fluctuations of temperature, consisting of an irregular rise and fall, sometimes reaching an exceptionally high degree, and never falling as low as normal; repeated chills, followed by profuse and debilitating sweats; rapid pulse and respiration, loss of appetite, constipation, and possibly loss of consciousness and delirium. An unusually high fever in mastoiditis should suggest the possibility of meningeal or vascular complications, but the occurrence of a sharp chill in such a case is the strongest reason for suspecting sinus involvement, and if the chill is followed by a febrile condition in which the temperature curve fluctuates violently, the diagnosis of a crumbling thrombus is absolute.

Now, it is perfectly clear from what has been said that, whether as the continuance of a mastoid operation that has exposed an unsuspected sinus thrombosis or as an operation instituted primarily for the abstraction of an inferred thrombus, the surgeon must work with the double purpose of removing as much as possible of the septic focus within the mastoid bone and the sinus and of preventing the spread of infective matter to the general circulation. The prognosis is always serious, but will be more favorable just in proportion to the early period at which diagnosis can be made and the proper treatment instituted for the thorough removal of the clot. Spontaneous recovery is not unknown, but the vast majority of cases that are permitted to run a natural course terminate fatally. That surgery offers the only hope of successful treatment in this affection, and that every visible particle of necrotic bone and septic material should be cleaned out of the

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mastoid process before the vein is opened, is not a matter for argument.

Confronted by an exposed sinus that is evidently or even probably thrombosed, what shall be the next step in the operation? Is is ever proper to open the sinus without having previously ligated the internal jugular vein? Does ligation add to the burden of the patient, or does it enhance his chances of recovery?

In this connection a study of the development of the treatment of this disease brings out some interesting facts concerning this part of the operation. In the early eighties it was the custom to eradicate the mastoid disease as far as possible, expose the sinus by removal of the necrotic bone in its neighborhood, and await developments for several days. If the septic fever continued and the patient's condition was not more than temporarily improved by the mastoid operation, the sinus was opened. Needless to say these operations were almost invariably failures. The first successful cases reported were by Arbuthnot Lane in 1889, and the next by Ballance in 1890, both of these operators having ligated the internal jugular in addition to cleaning out the sinus. Since that time numerous cases have been reported, both of simple curettement of the sinus and of this plus ligation of the vein, but the simple operation has not been attended by anything like the success that has followed the combined operation. Most of the successes that have been gained by the so-called simple operation seem to have been in cases of thrombosis occurring with acute suppurative otitis and mastoiditis. Here, as has been pointed out by Randall, the trouble we have to deal with is often a non-septic thrombus, and in many instances a phlebitis, and not a clot. If the clot is not septic and goes on to organization, it closes off the jugular quite as well as if we ligated it. When operating, however, we can never be sure that the clot in such a vein. even in the very acute cases, is sterile, and therefore the wisdom of leaving it undisturbed or of removing it without having previously closed the channel below is open to question.

The route from the sigmoid curve of the lateral sinus to the right auricle of the heart is a short and easily-accessible one. During the formation of a septic clot at this point infected particles may become detached and washed quickly on through the jugular vein, or, even after obliteration of the sinus channel, toxins, bacteria or portions of a decomposing thrombus may be absorbed or carried on into the general circulation.

It seems to me, therefore, wise, as a rule, to ligate the internal jugular before attempting to break up the thrombus occupying the sinus. One can never be certain about the bacteriologic condition of the thrombus; it is presumably infected. To open the sinus and attempt removal of the thrombus piecemeal with the jugular venous channel patent affords the opportunity at least for an embolus to be passed on to the central circulation. The portion of clot visible below the operative point may look innocent and yet be very dangerous. It can make little difference to the patient

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whether his jugular is obliterated a little below or a little above the angle of the jaw, and he is surely getting the advantage of conservative consideration when his vein is tied off at a point certainly below any probably infected region. Ligation of the internal jugular is an operation that can be quickly and easily performed, and it adds scarcely any calculable risk to the main operation, while the sense of security that comes of knowledge that the main pathway of general infection is obstructed is most comforting.

I will not consume your time with the detailed relation of cases, but will merely submit at present a brief summary of the results in eight cases I have operated upon. It will suffice to show here that they divide themselves into two distinct groups—those which received primary ligation of the internal jugular and those which did not. The four cases comprised in the first-named group all got well; three of these four were in a desperate condition at the time operation was instituted; one of them recovered only after a prolonged attack of septicemia that was due to absorption prior to the ligation; one was in such poor condition while on the table that I anticipated a fatal termination within a few hours, but his improvement was steady and satisfactory. The second group of four cases comprises those that did not receive preliminary ligation; all died. The first case was operated upon in 1899, and, following the prevailing opinion of the day, the sinus was not opened until the second day after the mastoid exenteration, although the diagnosis of thrombosis had been made. A septic clot was removed at the second operation, but the patient died 10 days later of septic pneumonia. The second case would probably have ended fatally even had ligation been performed, because the patient was in a thoroughly septic condition at the time he entered the hospital; nevertheless I feel now that he was not given the best opportunity to recover. The case was an extremely interesting one. When the sinus was exposed at the mastoid operation, and after the diagnosis of thrombosis, it appeared to be healthy. A hypodermic needle was introduced and fluid blood withdrawn, in view of which fact it was deemed unwise and unnecessary to open the vessel. That test has been proven by many similar experiences of other surgeons to be unreliable, and would not be employed today. At the autopsy a partial or parietal thrombus was disclosed below the point of puncture and not occluding the lumen of the sinus. The third and fourth cases of this group present nothing of particular interest except that they emphasize the necessity for obstructing the channels through which infection may be conveyed from the site of suppuration to the general circulation. One had the delayed operation and one was ligated after a septic clot in the sinus had been disturbed, but both died of metastatic abscesses.

To summarize my personal experience, then, four cases that were ligated prior to opening of the sinus all recovered, and four that were not ligated ended in death. Reviewing the conditions of these eight persons before and at the time of operation, I can find no essential differences between those of the two groups. To

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my mind the most important inference to be drawn from this experience is that the internal jugular vein should be ligated in every case where there is reasonable ground to believe that the lateral sinus is occupied by a septic thrombus, and that this ligation should be performed before an attempt is made to break up and remove the thrombus.

That ligation of the jugular may not be absolutely essential in all cases of sinus thrombosis is evidenced by those cases reported in which recovery occurred without it, but these must be offset by the cases in which recovery has been attained only through the success of an intermediary battle with septicemia and those which have never recovered. The operation of ligation of the jugular alone or when coupled with resection of the thrombosed vessel above the point of inferior ligation is simple and secure, and there are wanting as yet evidences of any prejudicial effects. In the event of a mural thrombus there is always danger of its mechanical disintegration. With complete thrombic closure of the vein, any possible deleterious effects upon the cerebral circulation which might ensue from ligation of the internal jugular are already accomplished, and this operation, subsidiary to the sinus thrombosis complication of mastoid disease, is in all such cases warrantable for the purpose of safeguarding the general circulation.

THE AMERICAN FAMILY.

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THE family, in societies such as that of America, implies a husband and wife, or, in other words, a father and mother with their offspring. There is, indeed, and I think fortunately, a secondary sense in which the term is made to embrace, in addition, living progenitors and descendants, and an even broader meaning which takes in both antecedent generations and collateral branches. But it is the first signification, namely, that of parents and immediate progeny, that is accepted as the type of the family and that sociologists generally recognize in the terms of Mr. Lecky as "the center and archetype of society." When I say "generally" I speak advisedly, for there are others who agree with Sir Henry Maine, quoted approvingly by Mr. Spencer, to the effect that "the unit of an ancient society was the family, that of a modern society the individual." There is, indeed, a philosophic cult which has taken on decided political importance not only in Germany, France, and Italy, but the United States, one of whose central purposes is the development of individualism at the expense of the family. But whichever of these views may be correct, either as a matter of fact or as a matter of principle—and I have no intention at this time to enter extensively into the dispute—it is certainly worth while that phy-

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sicians who officiate at birth, who mitigate the pangs of death, and who are the daily defenders of the family against influences that threaten the existence of its members should consider the characteristics and relations of what, even in the present stage of evolution, must be recognized, at least in a biologic sense, as the primary group in our social complex.

THE AMERICAN FAMILY.

But in what sense are we justified in using the term "American family?" Has it an ethnic significance or merely geographic limitations? This brings us face to face with the rather persistent speculations about "typical America" and "typical Americans." It furthermore brings fresh to our mind that here in America we have many people of many lands, and that, as a result of their commingling, the corpuscles of one people, mingled with those of another, presently go coursing together through the natural gates and alleys of a lusty progeny. Has this blending gone on until its final product, the great ultimate composite, has been evolved? If so, where may he be found? If not—for the reply must certainly be in the negative—when may he be expected, and what will he look like and be like when once he is arrived? The answer to this double question may well be left to the curiosity of the speculative ethnologist, while we content ourselves with a few obvious facts. Thus, taking the sculpture and paintings of former ages as criteria, and comparing the human figure thus portrayed with the human figure as we now know it in life, we may safely assume that, after the lapse of similar ages of the future, the ultimate American, if he shall have then arrived, will look very much like his respectable progenitors whom we now see everywhere around us. Yet while this is true, we must recognize that Americans are acquiring, have indeed acquired, a certain stamp of individuality by which they can be recognized at a glance as Americans, just as we recognize at a glance the German, the Frenchman or the Scandinavian, for what he is. Nobody who has traveled abroad can have escaped an experience or at least an observation confirmatory of this fact. The principle goes even farther—so far, indeed, that the natives of European countries who return for a visit to their native homes after several years spent in the United States are recognized by their physical appearance alone, and are spoken of as Americans by their former compatriots who may not know them personally. This change certainly cannot consist in any radical alteration, much less in eradication of the hereditary national stamp. Yet, possibly, in such instances the changes are of a character that, in a measure, may be reduced to terms. They become apparent when, returning from Europe, or, for that matter, when visiting Ellis Island, we study the physiognomies of the immigrants who have the spirit to resent the conditions with which they have found themselves enthralled and the enterprise to seek a broader and a better life in a fairer land. We then understand the change. We then see that, in the returning European, the garb of the peasant

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has disappeared in the genteel attire of the proprietor, the dependent air of the laborer has changed into the hopeful and confident bearing of the employer, while the stolid face of the social and political underling has disappeared in the cheery features of the freeman. Of such alchemy is our republic capable! But, particularly in the instance of native-born Americans, there is something more, something deeper than this, for there are cheery, well-dressed, hopeful, confident Europeans in abundance who are recognized as such at a glance. It follows, therefore, that some change is going on, something due to climate, habits, language, customs, habitations, food, and other factors that control and modify nutrition—something that reveals itself in facial expression, voice, bodily movements, and unconscious but more or less uniform mannerism, yet something that is too subtle for easy expression in words.

THE ULTIMATE AMERICAN THE TRUE ARYAN.

But whether our heads are getting longer or rounder, our cheek-bones more or less prominent, our noses beaked or pugged, our chins more prominent or receding, they are tendencies, if they exist, that likewise belong to the realm of speculative ethnology. It is a question of less practical importance to the American people than is the more significant fact that, with the exception of the Semitic element, our European immigration, although coming from practically every country, is in reality of common ethnic origin. It would seem, indeed, as if the three great primary branches, namely, the Graeco-Italian, the Celtic, and the Teuto-Slavic branches, through their many surviving ramifications, are again converging through multitudinous representations upon American soil, here to re-establish the great Aryan branch of the human family in its purity. I say in its purity, for we observe that the blending of our blood with that of people so unlike us as the Mongol and the Ethiopian is repugnant to the very fundamental instincts of our race, and is consequently impossible. The only other dissimilar element of importance in our midst is the Semitic, and even that can claim an ethnic kinship in the fact that it as well as the Aryans belongs to the ruddy races. Furthermore, taken as we find them here today, the Semites adjust themselves, if slowly, yet faithfully and loyally, to the salient features, political and social, of the civilization that surrounds them, and even occasionally blend in marriage with their Aryan cousins. But such instances are of negligible infrequency, and consequently do not materially modify the fact that, even under such unprejudiced surroundings as obtain in America, the Semitic race is held in aloofness—remains a "peculiar people"—largely, no doubt, through the reciprocal exercise of those primary racial repulsions that today find their fiercest expression where the Slav and the Jew, the two most primitive representatives of the divergent branches of the human family, attempt to dwell together in a peace which in that area will probably never be realized. With these elements elimi-

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nated from the process of amalgamation now going on in America we shall discover that the blending does not involve the assimilation of fundamentally dissimilar elements. The slight divergence of type characteristic of national groups, those physical characteristics, for instance, that distinguish the German from the Slav, the Englishman from the Celt, must be looked upon as so many accidents of travel, so many acquisitions of sojourn, so many fruits of experience. They mark little or no difference in the impulse toward civilization, although they may indicate a wider variation in the results achieved. But as these various peoples come together again after their long journey through the ages each will bring, as each is today bringing, his own contribution to the broadening civilization that is today, as it will continue to be, the increasing inheritance of the American family.

DOMINANT CHARACTERISTICS OF FUTURE AMERICAN CIVILIZATION.

The future civilization of America, so far at least as its dominant characteristics are concerned, is probably less a matter of conjecture than is the exact balance of elements that will be represented in the final blend of the peoples. Here, again, the deductions for the future can be fairly drawn from the experiences of the past. Beginning, as our country did less than three centuries ago, with distinct groups of English, Dutch, French, and Spanish, and later with very large groups of Germans, our civilization in language and customs speedily became wholly English. We have since had infusions in groups of varying numbers from practically every country of Europe. As a matter of fact, the foreign-born population of the United States in 1900 was about ten and a-third millions, of which four millions, or 38.3 per cent., were derived from English-speaking countries. The remaining six and a-third millions have come from continental Europe, Germany alone furnishing a third of them. Of the original groups, those which comprised the original settlements, not one has stood out against the predominant influence of the English element. Of the remaining groups, or those which have been formed by later immigrations, when not too large or too definitely isolated, but few have resisted the great tide of American civilization for longer than a generation. And there is not today a single ethnic group of European origin, however large, however completely segregated from the distinctly American element, or however recently established, but that presents signs of active disintegration and assimilation. The public school, with compulsory English, attendance upon which is enforced by law in many States, associated with the influence of the Church, the press, and active participation in political affairs, comprise an apparatus by which all foreign elements are ultimately propelled into their appropriate places in the body politic. In this wise are we English, with every prospect that we shall remain English to the end. This is the condition as we see it today, and I, for one, know of no reason why it should be changed in principle and

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effect, however much it may be modified in detail, in the American civilization of the future.

THE QUESTION OF "RACE-SUICIDE."

But we no sooner begin to felicitate ourselves on the present and prospective results of the great ethnic experiment now being conducted in America, we no sooner begin to wave our salutations to the typical American, the proud Aryan of the future, than the statisticians tell us that the birth-rate of the country is declining, and publicists of exalted position and influence warn us that this splendid race, yet in its formative stage, is actually engaged in the act of self-destruction. It seems, indeed, as if in certain States in which the computation, based upon the census returns of 1900, is completed, the birth-rate is materially lower than it was 10 years previously—that is, there were fewer children born to each thousand of men and women (potential parents) between the ages of 15 and 45. This is true in spite of the fact that during the same period the actual number of births were several millions in excess of the deaths. So long as the balance is on the side of births as against deaths the race will continue to exist. We can readily imagine that with a progressive decline in the birth-rate the time, however remote, would come when the balance would be on the wrong side. The mere fact, however, that the rate of increase in population by reproduction vacillated from twenty-eight thirty-seconds of the whole increase in population in 1840 to fourteen twenty-fourths in 1890, with but little tendency to reaction in 1900, was due to the fact that the immigration in 1890 was almost tenfold that of 1840. But if it were to be taken as an evidence of a declining ratio of births, a decline already indicated by the computations in several States, the fact would be serious if it had no other than a mere birth and death significance and if similar tendencies did not exist in other peoples, so that the balance between nationalities will be approximately maintained.

Leaving the real significance of this movement of population for further consideration, I wish to particularize my last allusion. Thus marked declines are noted in Prussia, France, Sweden, Norway, with slighter decrease in England, while slight increase in birth-rate is noted in Belgium, Saxony, and Russia. France has been held up as an instance of a dying population, and it seemed, indeed, as if in 1900 the conclusion were justifiable, for in that year the recorded deaths exceeded the recorded births by nearly 26,000. This, however, was the culmination of a progressive decline, for in the succeeding year the pendulum was found to be swinging back, indicating that the surplus of births over deaths amounted to a little in excess of 72,000. But even this margin is an evidence of a stabile population more nearly in a state of equilibration than

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any other in the world. Similar haltings, although less marked, have been noticed in other countries. Almost as marked a crisis was, however, reached in Belgium in 1817—a year of scarce food—followed by an immediate reaction. This same country again showed a steady decline from 1897 to 1900, but in the following year exhibited the largest preponderance of births over deaths in its history. A similar curve has been observed repeatedly in other countries, notably in Sweden. In the United States the percentage of increase by reproduction fell from 24.46 per cent. in 1860 to 15.38 per cent. in 1870, due, no doubt, to the Civil War, returning to 22.79 per cent. in 1880. Malthus gives numerous instances of the decline of birth-rate progressively with the increasing density of population in which reproduction returned again to its normal rate when either war, pestilence, actual famine, or migration had once reduced the congestion. It seems, therefore, that, whatever the cause of a declining birth-rate, the most marked depressions are followed by reactionary curves. Then, too, it is well enough to remember that, according to Duvillard, the span of life in the eighteenth century was 26 years, and that, according to Lombard, it was 40 years during the nineteenth century, and that, according to present indications, it bids fair to go beyond 50 years before the end of the present century. It is also interesting, if not important, in the present connection to bear in mind that the population of Europe at the end of the fifteenth century was less than 48,000,000, and that it had increased to something over 350,000,000 at the end of the nineteenth century, or, in other words, that it had increased but about sevenfold in 400 years. Then associate this with the fact that between 1840 and 1900 alone the population of the United States jumped from a trifle over 17,000,000 to a little under 76,000,000, four-fifths of it being due to reproduction, or, in other words, the population of this country increased nearly fivefold in the short space of 60 years. Now associate all of these facts, and it would seem that the extinction of a people, particularly the American people, through either absolute involuntary loss of fecundity or the equally absolute but voluntary repression of reproduction, such as must be implied by the term "race-suicide," is a calamity the fancied imminence of which need not in the least disturb our dreams.

THE FECUNDITY OF AMERICAN WOMEN.

But it is urged that the decline in reproduction is chiefly with the native American women, and that if the disparity continues to increase the continental peoples will become the dominant elements of our population, and that, as a consequence, our civilization will lose its distinctly Anglo-Saxon type. This observation is urged in face of the increasing stature, the improving physique of American

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women, in spite of the increasing frequency of the "Gibson girl" in the flesh as well as in fashion plates, and in spite of the fact that she is the distinctly evolved type of the American woman. Collective inquiry has, indeed, been made of our higher educational institutions for women to find out how many babies have been born by their graduates, with the inevitable result that it was shown that relatively fewer children are born of cultivated American women than of the peasant women recently imported from Europe. The last census and the annual returns from American cities confirm the fact, which nobody has ever disputed. As a result it is assumed and heralded that our civilization is exercising a deteriorating influence on the reproductive power, that culture is destructive of fecundity, and that, consequently, with the spread of education, with the increased diffusion of wealth and with the multiplication of luxuries, American women will no longer have the power to recruit the ranks of the race. It was precisely these conclusions, based upon precisely such an inquiry as I have indicated, that a few years ago were embraced in a paper by a distinguished American physician. And lest the news would not travel fast enough or far enough, the valuable document was translated into three other languages and published simultaneously in five leading countries. Yet the author of that paper, like many who have since been repeating his erroneous conclusions, began his deductions with a fatal error. This consisted in his misuse of the word fecundity, which, if it means anything, means the power to conceive and bear children. It was assumed by the writer in question that because native American women did not bear children in greater numbers they had lost the power to do so, when, as a matter of fact, known to every practicing physician in the country, as it ought to have been known to him, the average American woman does not have more children because she does not care to have them, and because her husband, for the most part, acquiesces in her view. Her reasons are not without force, and if reduced to the last analysis do not indicate a loss, but rather a development, if not an actual exaltation, of the maternal impulse. It is my opinion, based upon studious professional contact with precisely this phase of our social life during more than a quarter of a century, that the disinclination of American mothers to bear more children than they can properly educate and support is based upon an intelligent and conscientious regard of the rights and necessities of unconceived offspring rather than upon an aversion to the sacred office of motherhood. It is true that there are many women who prefer to be their husbands' mistresses rather than their wives, and who sustain the marital relation for mere sensual gratification to the exclusion of its physiologic consequences, but, in my opinion, they comprise but a small minority of childless wives as compared with the considerate and

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self-denying women who think twice before they bring children into the world under unfit conditions. They feel, without knowing it, that, in effect, it is true in America, as Korosi shows that it is true in Buda-Pesth, that the span of life for the rich is 47, while that for the poor is but 32 years. And possibly they feel that the increasing complexity and consequent severer competition of modern life require that only the fittest shall be entered for the race. They recognize, subconsciously possibly, certainly not in definite terms, but they nevertheless recognize the force of the law enunciated by Mr. Spencer that "whatever conduces to the highest welfare of offspring must more and more establish itself, since children of inferior parents reared in inferior ways will ever be replaced by children of better parents reared in better ways." It follows, therefore, that the impulse, conscious or subconscious, of the American wives of today is to breed not more, but better children. They are Christians, with the consciousness of Christian dnty toward their children, and, consequently, are far removed from the persuasive influence of the Koran, which offers paradise, just as some countries offer lands and money, to the father of 10 children, although I believe both the Mahommedan Church and the Christian governments resemble each other in their failure to bestow such bounties upon the mother who bears the brunt of the transaction. The American wives are, furthermore, members of a non-militant society, and consequently do not respond with enthusiasm to the call for children, however loud or however eloquent, when that call is based upon the sentiment embraced in the most brutal remark ever made by the First Napoleon, to the effect that the greatest woman in France was she who bore the greatest number of sons for the armies of France. Nor do they interpret the command to multiply and replenish the earth as an injunction to abandon themselves to an existence of unrestrained fecundity, particularly in view of the fact that the earth is already reasonably well replenished. They do, however, act upon the principle that by furnishing a less numerous but better-endowed, better-conditioned, better-equipped, in short a fitter progeny, they best furnish leaders for a society that from its very nature is most in need of leadership. It is these considerations that force us to the conclusion that possibly the lessened birth-rate may work the salvation rather than the destruction of the distinctly American element in our population and of the distinctly Anglo-Saxon feature of our civilization.

THE DANGERS OF OVERPOPULATION.

It seems, indeed, to the careful student that the danger to the American family today and still more in the future lies in the direction of overpopulation rather than underpopulation. Our vast area, capable of sustaining a much larger population, makes it diffi-

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cult to comprehend that the overpeopling of our land is destined to be a very practical, indeed a very perplexing, problem in the not remote future. This becomes all the more difficult to comprehend when it is remembered that in 1890 the United Kingdom had 184, France 320, Belgium 530, and Italy 260, while the United States had only 20 people to the square mile. If, however, we turn from these figures to the rate of increase in the density of population we shall discover that for the 70 years from 1820 to 1890 it was, according to Mulhall, only about 25 per cent. in the United Kingdom and less than 100 per cent. in France, Belgium, and Italy, respectively, while it was over 650 per cent. for the same period in the United States. The rate of increase in this country has been vastly accelerated in the 15 years that have since elapsed. Take these in association with the additional facts that much of our great area cannot contribute to the sustentation of the people, and that our population, today over 80,000,000, has been doubling itself on an average of once in less than every 25 years since 1790, and that it will probably continue to do so in the future, and no vivid imagination, no prophetic vision, will be required to foresee the time not many generations hence when the family institution here will be subjected to the disintegrating socialistic influences that are today assailing it under pressure of overcrowding in the countries of Europe. In the imminence of this contingency, which is no fancied one, a contingency which, while not menacing the race, does threaten society with calamitous disorganization—I say that, in the imminence of such changes, it becomes the duty of the medical profession, as the mentors of the people in all that concerns their well-being, actively to foster those influences that will continue to make the family the unit and archetype of American society.

THE DUTY OF THE PHYSICIAN.

This duty on the part of the physician lies upon him at every point of contact not only with his clientele, but with society in general. Does an anxious mother consult him about the marriage of her daughter? The opportunity is at hand to teach the important lesson that while reproduction is by no means the sole object of marriage, no marriage is complete without it; that whatever other considerations may influence selection of a husband, his presumptive desirability as the father of prospective children should have a governing force in the final choice. These are, indeed, practical questions upon which the influence of the medical profession may well be sought. Does a young wife ask for a safe means to evade for a time the usual results of the marital relation? The occasion has arrived for a lesson in sexual hygiene by which the health of herself and of the offspring she may bear under more auspicious conditions may be properly conserved. Does another wife, more shameless, seek a means to destroy a conception already begun? The time has come not only to say "no," but to make the misguided woman conscious of the enormity of her offense. Happily, following the advent of the more or less hygienic measures for the pre-

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vention of conception, there has been a progressive decline in the vicious and disastrous practice of abortion. This crime, tolerated in antiquity, was permitted by all pagan societies. Aristotle, indeed, went so far as to insist that it should be enforced by law when population had reached certain assigned limits. There was no law against it in Greece, none in Rome under the republic, nor indeed until the latter days of the empire. Christianity, however, at its very advent issued its mandates, clear and ringing, against the crime, and stringent legislation against it ensued in every Christian country. Against this practice yet all too prevalent, a practice which not only destroys the life of the innocent unborn, but frequently that of the mother, generally destroying her health and her fecundity when she does survive it, the medical profession has always exerted, as it will always continue to exert, its beneficent influence. But such opportunities should be utilized by the conscientious physician as an opportunity to teach the potential mother how, in the event of conception, she may realize the best results for herself, her offspring, and society. She should be told how to care for herself physically before and during pregnancy, so that she may have a healthy child, and how, by mental occupation and the cultivation of high ideals, she may supply her prospective offspring with formative corpuscles laden with the elements of useful character. She should be taught how to rear her offspring that it may become strong and healthy, able to bear its share of burdens in the great republic.

THE ENEMIES OF THE FAMILY.

But these instances are individual, and while the lessons taught may be all the more effective for that reason, there still remain many other questions upon which the physician should teach the community as a whole. Thus he ought, for instance, to recognize and, as occasion offers, teach that an enemy of the home is to be found in every influence that favors the early and wide dispersion of its members. The disintegration of religious ties, the development of residential schools, the rapid extension of far-reaching transportation facilities, the diversification of industries, the industrial employment of women, the formation of distinct industrial groups, the character of our political parties, the popularization of hotels and apartments for residential purposes, and, finally, the development of clubs for both men and women at the expense of the home are so many influences that are inimical to the American family, particularly in its broader and more comprehensive sense. Each of these topics could serve as the theme of a discourse. I only mention them that they may be taken into account as actual conditions, not all of them bad in their general effect, the majority of them being necessary incidents of evolving civilization, but still conditions the influence of which tend to disperse the family by diversifying and scattering the interests of its members. Their tendency is to disintegrate the family ties, establishing first extreme

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individualism, with the re-establishment of the social relations under communistic conditions. The logical outcome of such reactionary tendencies was exemplified in the establishment of Oneida and similar communities that by their early and disastrous failure have acted as danger signals which I believe it is our duty, as occasion offers, to interpret for the protection of the family institution. It is not assumed that these various conditions, comprising, as they do, the dominant characteristics of our modern life, are to be changed, but something may be done to fortify the family against their encroachment.

THE SOCIAL EVIL.

There is, however, one other subject that appeals with greater force to the medical profession, if only for the reason that medical men, in their professional capacity, come daily in contact with its ravages. I allude to the social evil. My views on this question, and the views that I believe ought to be instilled by the medical profession into society, are expressed with great precision by Mr. Lecky, by whom "it is argued that, however persistently society may ignore this form of vice, it exists nevertheless, and on the most gigantic scale, and that evil rarely assumes such inveterate and perverting forms as when it is shrouded in obscurity and veiled by a hypocritical appearance of unconsciousness. The existence in England of certainly not less than 50,000 unhappy women, sunk in the very lowest depths of vice and misery, shows sufficiently what an appalling amount of moral evil is festering uncontrolled, undiscussed, and unalleviated under the fair surface of a decorous society. In the eyes of every physician, and, indeed, in the eyes of most continental writers who have adverted to the subject, no other feature of English life appears so infamous as the fact that an epidemic, which is one of the most dreadful now existing among mankind, which communicates itself from the guilty husband to the innocent wife, and even transmits its taint to her offspring, and which the experience of other nations conclusively proves may be vastly diminished, should be suffered to rage unchecked because the legislature refuses to take official cognizance of its existence or proper sanitary measures for its repression. If the terrible censure which English public opinion passes upon every instance of female frailty in some degree diminishes the number, it does not prevent such instances from being extremely numerous, and it immeasurably aggravates the suffering they produce. Acts which in other European countries would excite only a slight and transient emotion spread in England over a wide circle all the bitterness of unmitigated anguish; acts which naturally neither imply nor produce a total subversion of the moral feelings, and which in other countries are often followed by happy, virtuous, and affectionate lives, in England almost invariably lead to absolute ruin. Infanticide is greatly multiplied, and a vast proportion of those whose reputations and lives have been blasted by one momentary

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sin are hurled into the abyss of habitual prostitution—a condition which, owing to the sentence of public opinion and the neglect of legislators, is in no other country so hopelessly vicious or so irrevocable." None can gainsay that these eloquent words may be applied with equal severity to American conditions wherever and whenever they are controlled by maudlin sentimentality, that is too generally permitted to control the police policy of our States and municipalities.

THE STATUS OF WOMEN.

Physicians as students at short range of the social fabric unhesitatingly accept the dictum that the status of woman is the index of a civilization. This is shown throughout the ethnic scale from the procuring of wives by capture, then by purchase, through the intermediate stage in which American fortunes are traded for European titles, up to that exalted stage when the honest young American wooes and wins his neighbor's daughter and installs her in the home he has built for both within the shadow of the church and the schoolhouse. This is the type of home the purity of which is to be safeguarded by every sentiment and every material condition that can be thrown around it, just as in Rome at its height law and public opinion combined to make matrimonial purity the most absolute. In those times a Roman senator was censured for indecency because he kissed his wife in public, a Roman mother was in disgrace who wilfully delegated the suckling of her young to another, and the courtesan class was regarded with such contempt that no member of it might ever touch the sacred altar of Juno, the goddess of marriage. It was only when Rome abandoned these standards that Rome fell. The same fact applies to Greece, whose glory departed when the wife was relegated to seclusion while the public women—the heterae—were given social recognition, when Phidias illustrated the Greek wife when he represented Aphrodite standing upon a tortoise, and when Thucydides said that the highest merit of a wife was never to be spoken of either for good or for evil. It was under these circumstances that many women who otherwise would have become wives chose rather to become courtesans, for of the women of Greece, save only Phocion's wife, it was the courtesans alone who figure in the annals of the country. We hear of Pericles and his Aspasia, of Socrates and his Diotoma, of Praxiteles and his Phryne, of Appeles and his Lois, of Epicuras and his Leontium, courtesans all, while their wives, married simply for breeding purposes, were relegated to the backroom of oblivion. It was in such an age and from such conditions that came the disintegration of the famous republic, just as the disintegration of Sparta had begun when the law decreed that old or infirm husbands should cede their young wives to younger men who could produce vigorous soldiers for the State. Tendencies equally disastrous in their disintegrating influence upon the family are already threatening to develop in our great commonwealth. Women, the products and exemplars of vice and crime, are today exploited into heroines by the press and the stage until the contagion of their example

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becomes virulent and active throughout the body politic. The harlot of yesterday married to the millionaire of today is all too likely to be received into certain otherwise respectable homes on tomorrow; the man reeking with disease, the product of vice, is all too likely to be accepted as an eligible husband if only he is the possessor of the wherewithal to purchase the weeds of an early and highly conventional widowhood. Courtesan and paramour, without reference to their moral degradation or the physical consequences of their vice, are admitted without let or hindrance to the marriage relation. Then, tiring of each other, or seeing others more to their fancy, they get an accommodating court to dissolve the union, if for no other reason, on the statutory grounds of incompatibility, after which, seeking out a convenient magistrate or a complacent preacher, proceed to contract new alliances through which further to propagate their pernicious influence.

THE MENACE OF THE DIVORCE COURT.

I have already said that the fall of Rome came when she had abandoned her high ideals of domestic virtue. It came, in fact, in the period of which Tertulian wrote that divorce was the first fruit of marriage, in which Martial gives the record of a woman who had had her tenth husband, in which Juvenal tells of a woman with eight husbands in five years, while St. Jerome, as if not to be outdone by the others, gives the authenticated case of a woman married to her twenty-third husband, she being his twenty-first wife. It was in such an age that public opinion tolerated Cicero when he repudiated his wife, Terentia because he desired a new dowry, and Augustus when he took Livia from her husband by whom she was already pregnant, and Cato when he gave his wife to Hortensius, taking her back after her death, and Maecenas and Paulus Aemelius, and Sempronius Sophus, who changed their wives at will. Would not the annals of our own divorce courts reveal some almost parallel examples? Certainly the opportunities for such records are ample. There were more than twice as many divorces in Cook county, Illinois, in 1901 than were granted in all Belgium, while those in a half-dozen American cities exceed those granted in the whole of France for the same period. In Chicago there were 1808 granted in a single twelvemonth, being one to about every eight of marriages. In Cleveland, Cincinnati, Indianapolis, and Omaha the proportion was even higher, while in San Francisco there was one divorce for a little over every four marriages. In these figures and in the tendencies which they imply we discover what is probably the most formidable enemy of the American family, tendencies to combat which the medical profession should join hands with such representatives of the church as are not too deeply

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interested in the pecuniary rewards of remarriages. There are many other influences in our social life that are antagonistic not only to the family, but remotely to the primacy of our race, but I cannot pause to discuss them in the time allotted for this address.

CONTRASTING TYPES OF FAMILIES.

I ask, by way of *résumé*, that you consider a few contrasting types of families as we find them represented in modern society—types that bear upon the question of reproduction and indirectly upon the maintenance of the family institution itself. The first picture is drawn by Gustav Frenssen, who opens his deservedly famous novel, "Jorn Uhl," with a portraiture of the unfortunate home spirit of German life—a portraiture so vivid, so faithful that certain of the great novelist's compatriots, while crowning his great novel as an epic, have reproached him for his merciless realism. The picture is, indeed, far from a pleasing one, portraying, as it does, a woman, delicate in mold, tender in sensibilities, the wife of a hardy and brusque farmer, who married her for mere breeding purposes, and to whom she has already borne four children as the fruits of his insistent passion. She is seen in the midst of her fifth childbirth, in earshot of the thoughtless jeers of her elder offspring and the coarse and equally thoughtless revelry of her husband, who, wedded to his selfish pleasures, turns a deaf ear to her pleadings, until, to the consternation of all, her voice is stilled in death. There is even more to be seen in the background and the atmosphere with which the artist has deftly surrounded the tragic action. We see a state of society in which a wife is held as the mere breeder of children, in which fecundity knows none but natural limitations, and in which children, each at birth being another horse in the stable with which to divide the oats, are tolerated chiefly for the burdens they may ultimately lift from paternal shoulders.

The next sketch represents a large Slavic settlement in Kansas, in which the village life of Russia is evidently as well exemplified as upon the far-away steppes. I clip the item as I found it in a newspaper a few days ago:

"In driving through Ellis county," says the correspondent, "one is not led to believe the people are prosperous from what one sees in the way of farm buildings. The houses are small, mere shacks. These dwellings, so unsightly from without, are also unattractive within—bare walls, bare floors, the cheapest of furniture. The housekeeper is in harmony with the surroundings. The wife has never known anything but the plainest living and hardest toil both in house and field. Every man, woman, and child old enough to drive a team toils in the field."

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This, the correspondent further assures us, is probably the most fecund county in the United States, and one nidus from which we may reasonably expect the development of a peasant class, so long, happily, a stranger to our institutions.

The third sketch is that of the average American home, in which the wife is not only the companion of her husband, but the mother of such children as they feel they can properly support, educate, and place favorably in life. In such a home there is toil enough, but it has its limit in the demands of the family circle for social enjoyment and at least elementary culture. The newspaper and the magazine, the theater and the church, each contribute its mite to the civilization that is rocked in the cradle of such a home. Here, under sanitary conditions, new lives develop with the best prospect of ample years in which successfully to meet the more complex competition, the fiercer conflict for existence, that awaits them in the future. It is these homes, it is such families, to the preservation of which I invoke your assistance.

THE OUTLOOK.

But I do not mean to imply by all that I have said that the outlook is in the least dismal. So far as the race is concerned we have every reason to look forward to the re-establishment of the Aryan family on American soil as the most important eventuation in the history of peoples, one already freighted with the largest fruition in the annals of mankind. Our civilization, Anglo-Saxon in genesis and character, the civilization that has brought into the world the largest share of human happiness by vouchsafing to mankind the largest share of human liberty, is already so well established that its perpetuation along present lines is already assured. We see in a declining birth-rate only a natural and evolutional adjustment of race to environment—an adjustment that insures rather than menaces the perpetuation of our kind under favoring condition. We see the family surviving and flourishing under more favoring conditions than were probably ever enjoyed by preceding generations and peoples, although menaced by influences which, if not corrected, threaten seriously to disturb the social order, through which the greatest progress and the greatest happiness have been achieved. The corrective tendencies are already operative, and consist, at least in part, in the more general diffusion of intelligence, in the development of industrialism, in the development of voluntary co-operation as opposed to involuntary co-operation, in the improving status of children, and in the fullest advancement of women within normal limitations. In lending aid to the operation of these forces we shall, I believe, be doing a good part in fostering that cornerstone of our society, the American family.

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Book Reviews.

PROGRESSIVE MEDICINE. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Vol. III, September, 1905. Octavo, 298 pp., with 22 engravings. Per annum in four cloth-bound volumes, $9; in paper binding, $6. Philadelphia and New York: Lea Bros. & Co.

This, the third volume of the series, is devoted to diseases of the thorax and its viscera, including the heart, lungs, and blood-vessels; dermatology and syphilis, diseases of the nervous system, and obstetrics. The first article is by William Ewart. M.D., F.R.C.P., of London. A very good review of recent literature on tuberculosis marks nearly half of this article. Pneumonia, which has claimed the center of the stage in America, is not mentioned at all except in a six-line reference to heart-failure in pneumonia. There is, however, a brief discussion of primary pneumococcus broncho-pneumonia.

The section on Dermatology and Syphilis is by Dr. Wm. S. Gottheil of New York; that on Diseases of the Nervous System is by Dr. Wm. G. Spiller of Philadelphia, and the section on Obstetrics is by Dr. Richard C. Norris of Philadelphia. Of this section fully half is devoted to an interesting discussion of the diseases and accidents of pregnancy, about 15 pages to labor, the same space to the puerperium, and the remainder of the article to obstetric surgery.

MANUAL OF THE DISEASES OF THE EYE. By Charles H. May, M.D., Chief of Clinic and Instructor in Ophthalmology, College of Physicians and Surgeons, Medical Department, Columbia University, New York, 1890-1903; Ophthalmic Surgeon to the City Hospitals, Randall's Island, New York; Adjunct Ophthalmic Surgeon to Mt. Sinai Hospital, New York, etc. Fourth edition, revised, with 360 original illustrations, including 21 plates, with 60 colored figures. New York: William Wood & Co.

The most satisfactory textbook on diseases of the eye yet produced for the general medical student. With the new colored plates, which constitute the chief features of change in the fourth edition, this manual assumes all the advantages of a combined atlas and textbook. The illustrations have been well chosen and beautifully reproduced. The text is throughout clear, concise, and explicit. Everything that the undergraduate student requires is presented in an attractive and impressive form, and we have no hesitancy in recommending it to students and general practitioners as an authoritative guide.

We gladly avail ourselves of the privilege of congratulating the author upon the great success of his book. A fourth edition demanded within five years is an unusual compliment, but in this case a very deserved one.

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OBSTETRIC AND GYNECOLOGIC NURSING. By Edward P. Davis, A.M., M.D., Professor of Obstetrics in the Jefferson Medical College, Philadelphia; Obstetrician to the Jefferson and Polyclinic Hospital; Obstetrician and Gynecologist to the Philadelphia Hospital. Second edition, revised. Philadelphia, New York and London: W. B. Saunders & Co. 1904.

This book has been prepared for the use of pupils in the training schools for nurses in Jefferson Hospital and Philadelphia Hospital. It is liberally but not profusely illustrated, and the text is decidedly enriched by the illustrations. The book is in all respects an excellent manual for nurses.

BOOKS RECEIVED.

DISEASES OF THE NOSE AND THROAT. By Cornelius Godfrey Coakley, A.M., M.D. Philadelphia: Lea Bros. & Co.

INTERNATIONAL CLINICS. By A. O. J. Kelly, A.M., M.D. Philadelphia: J. B. Lippincott Company.

AMERICAN LARYNGOLOGICAL ASSOCIATION. Session held at Atlantic City, N. J. Published by the Association.

HYGIENE AND PUBLIC HEALTH. By B. A. Whiteledge and G. Newman, M.D. Chicago: W. T. Keener & Co. Price, $1.75.

CLINICAL METHODS. By R. Hutchinson, M.D., F.R.C.P., and H. Rainy, M.A., F.R.C.Ped., F.R.S.E. Chicago: W. T. Keener & Co.

A MANUAL OF CHEMISTRY. By A. P. Luff and Frederic James M. Page, B.S.C., R.I.C. Chicago: W. T. Keener & Co.

INDIGESTION. By Geo. Herschell, M.D., London. Chicago: W. T. Keener & Co. Price, $1.50.

OPHTHALMIC NEUROMYOLOGY. By G. C. Savage, M.D. North Nashville, Pa.: Published by the author.

THE ELEMENTS OF HOMEOPATHIC THEORY, MATERIA MEDICA PRACTICE AND PHARMACY. By F. A. Boericke and E. P. Anshutz. Philadelphia: Boericke & Tafel.

DISEASES OF THE SKIN. By George Thomas Jackson, M.D. Philadelphia: Lea Bros. & Co.

DISEASES OF THE EYE. By Charles H. May. Fourth edition, revised. New York: William Wood & Co.

PROCEEDINGS OF THE AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION. Sixtieth Annual Meeting. Published by the Association.

THERAPEUTICS: ITS PRINCIPLES AND PRACTICE. By Horatio C. Woods, Jr., M.D., LL.D. Philadelphia: J. B. Lippincott Company.

THE DIAGNOSTICS OF INTERNAL MEDICINE. By Glentworth Reeve Butler, Sc.D., M.D. New York: D. Appleton & Co.

THE PRINCIPLES AND PRACTICE OF MEDICINE. By William Osler, M.D. New York: D. Appleton & Co.

PRACTICE OF MEDICINE. By Hughes Dayton, M.D. Philadelphia: Lea Bros. & Co.

PROGRESSIVE MEDICINE. By Hobart Amory Hare, M.D. Philadelphia: Lea Bros. & Co.

MODERN METHODS OF TREATMENT—ORGANOTHERAPY. By H. Batty Shaw. Chicago: W. T. Keener & Co. Price, $1.75.

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MARYLAND MEDICAL JOURNAL.

JOHN S. FULTON, M.D., *Editor.*

Associate Editors:

THOMAS R. BROWN, M.D. | HUGH H. YOUNG, M.D.
ROBERT REULING, M.D. | JOSE L. HIRSH, M.D.

BALTIMORE, DECEMBER, 1905

THE MARYLAND ASSOCIATION FOR THE PREVENTION AND RELIEF OF TUBERCULOSIS.

THE Maryland Association for the Prevention and Relief of Tuberculosis makes an appeal to the public for the sum of $6000 to enlarge its work during the coming year. This association has not yet completed the first year of its existence, but has found its definite place among the strong agencies for the betterment of social conditions in this State. As is usually the case in such undertakings, the work already in hand brings the association to other work, not anticipated, but closely related to the prevention of tuberculosis, and therefore necessary to be done. The campaign of popular education, begun by the association at the point where the Tuberculosis Exposition left it, has been prosecuted vigorously and with effect. Besides a large number of public lectures in various parts of Baltimore, meetings have been held in nearly all of the 23 counties of the State. The association supplies interesting copy for publication, and the county newspapers have made liberal use of this matter. Co-operative relations have been established with organized charity and organized labor, with local boards of health and county school boards. It can now be said quite confidently that public opinion in Maryland is as well informed in the causes and prevention of tuberculosis as in any other area of similar extent and population. Most of the particulars in the restriction of tuberculosis have been provided for. The registration law is now in satisfactory operation. Physicians are generally engaged in the domestic prophylaxis which the law imposes on them. Boards of health are somewhat slow in providing for the disinfection which the law requires, but the information which is slowly accumulating wherever this phase of the work is neglected will soon compel the obedience of local boards of health or empty them out of their political berths. With a few more tuberculosis dispensaries, with considerable expansion of the work of instructive nursing, and with increased facilities for sanatorium treatment, our special armament against tuberculosis will be about complete.

Some of the fundamentals of public hygiene in this State need strengthening, however, and one of these has come to be of interest to the association. One of these is the question of child labor, with the closely-related question of school attendance. The laws of the State on child labor need but little amendment, it seems, though there are some unwise exemptions in favor of certain industries. The legislature has not provided a sufficient force of

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inspectors to make the law effective. The law on school attendance does not apply equally in all parts of the State. With laws on these subjects in successful operation we shall very greatly strengthen the resisting power of the State of Maryland against inroads of disease, and especially of tuberculosis. A general movement is now arising among the organized philanthropic agencies to improve the conditions of childhood, and in this movement the Maryland Association for the Prevention and Relief of Tuberculosis will take an active part. The purposes of this association should commend themselves especially to the medical profession. Medical men are already good contributors of work as well as of money, and it is in their power to direct the attention of charitable laymen to the needs of the association.

MILK.

Two other problems of general hygiene may be mentioned here on account of their rather intimate relation to the spread of tuberculosis. One is the milk supply. The Commissioner of Health of the District of Columbia has more power of control over the milk farms of Maryland than the Health Commissioner of Baltimore or any other public health official in Maryland. The powerful influence of the United States Department of Agriculture, which the people of remoter States have found so useful, has not been employed by the people of Maryland to improve the business of dairying. The examples furnished by Massachusetts, Boston, New York, Rochester, Newark, Yonkers and a score of lesser cities have not stirred any Maryland town to emulation. The subject of dairy hygiene has hardly been touched in Maryland. Several years ago the Sanitary Live-Stock Board asked for authority to supervise dairies and to study tuberculosis in dairy cattle. This effort received very little popular support, and the interested opposition was not very strong, though it sufficed. Instead of granting the authority and the means asked, the legislature enacted a law governing the physical conditions of housing cattle. These regulations were not unimportant, and perhaps they became operative, but no noticeable improvement occurred in the practice of dairying. More recently an attempt was made to prohibit the business of dairying within the limits of Baltimore. This effort also failed, or did worse than fail. The compromise measure which eventually passed is said to have abolished the worst of the city dairies. If that be true, no practical public benefit resulted, for an indefinite extension of time was granted to a business which should not be tolerated under urban conditions. Future endeavor to improve the milk supply will very probably find public opinion awake and moving, for a campaign of education, already begun, will be waged very actively during the coming winter and spring by a course of public lectures and concluding with an exhibition covering the whole subject of milk in its relations to public health.

HOUSING.

ANOTHER appropriate subject for consideration at this time is the housing problem. Having no such monstrous abuses as those which are in process of abatement in New York, nor such sequestered slums as are found in

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Washington, Baltimore has nevertheless her evil housing conditions which imperil the health of her citizens. In some sections great numbers of negroes and elsewhere crowds of alien poor live together under most unsanitary conditions. All about the city one may find populous alleys, impossible to clean, where the children of the poor may see the sun rise at 10 and set at 3 behind the houses of the rich, and may learn that there is no end to a city's scavenging.

At the beginning of a great sewerage project and of a splendid scheme of park and playground extension, the time seems opportune to obliterate the worst slums and to give the children of the poor a square deal in the matter of fresh air and sunshine.

These reforms will bear early fruit in diminished prevalence of acute infections, especially among children, but the richer yield will come much later, when stronger men and women meet the lesser hazards of a fuller life in a cleaner city.

THE MOSQUITO PROBLEM.

IF the mosquito problem interested the politicians of Baltimore as it interests the politicians of New Orleans, the public meeting on November 1 would have seemed very significant. It was significant; the illusion is that it was not. When McCoy Hall is filled with Baltimoreans who want to hear this problem discussed, it means that the subject has been advanced to a position of importance in local politics. When such a meeting competes successfully with the more stirring attractions of a political contest, it means that the mosquito campaign is definitely under way and that uninformed officials must qualify as fast as they can to give the movement respectful and intelligent consideration.

Those of us who try to be informed about the practical work of exterminating mospuitoes were as surprised as any by Dr. Smith's statements concerning the success attained in New Jersey. It was most encouraging to be told that, with increased experience, the expense of such work has diminished rapidly, while the results have grown more satisfactory. "In a campaign against mosquitoes," said Dr. Smith, "to know what not to do is as important as to know what to do." "Much money has been wasted on pools which are not and cannot be breeding-places for mosquitoes." "The use of oil is a tentative remedy—a makeshift—against the mosquito pest." "The breeding of mosquitoes is *intensive*, and not *extensive*."

Mr. Coffin's account of the distribution of species in and around Baltimore was also interesting, and his confident assurance that Jones' falls does not propagate many mosquitoes eliminates a large part of the anticipated cost of our local campaign. Mr. George Stewart Brown, who has consistently advocated legislation on this subject during his career in the city council, and Dr. Howard A. Kelly, who supported the scientific investigation of the local problem, are to be congratulated on the success of the recent meeting. Having sufficient weight of public opinion and of scientific and practical authority behind it, this movement now commands the serious attention of city officials, and its future progress should not be difficult to maintain.

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Medical Items.

BALTIMORE.

DR. WM. F. FORIEN died at his home in Baltimore on November 7, aged 34. Dr. Forien was a graduate of Baltimore Medical College in 1899.

STATE SENATOR CHARLES H. LINTHICUM of Baltimore has announced that he will introduce a bill at the coming legislature providing for a State sanatorium for tuberculosis.

A SUIT for damages has been brought against the College of Physicians and Surgeons of Baltimore for making an autopsy without the consent of the wife of a patient who died at the City Hospital.

DR. JAMES BOSLEY, Commissioner of Health of Baltimore, and Dr. John S. Fulton, secretary of the State Board of Health of Maryland, attended the Conference on Quarantine and Immigration at Chattanooga, Tenn., on November 9 and 10.

THE State Board of Medical Examiners for Maryland will hold the regular examinations December 13 to 16 at the hall of the Medical and Chirurgical Faculty, 847 North Eutaw street. Applications for examination must be made on or before December 7.

BALTIMORE'S record of complete exemption from smallpox was broken on November 26, when a colored man suffering with the disease was found in the street and sent to quarantine. The patient is a barge man and unable to account for his infection.

DR. W. W. FORD, instructor in bacteriology at Johns Hopkins Medical School, has produced an antitoxin for mushroom poisoning. His serum has been produced in the usual way, by the inoculation of increasing doses of the mushroom toxins into animals until their serum becomes antitoxic. The protective power of the serum has been proved for animals, but not for man.

DR. CHARLES CARROLL SHIPPEN died at his home in Baltimore on November 6, aged 49. Dr. Shippen graduated at the University of Maryland in 1879. He had not been active in medical practice for many years, but was exceedingly active and most useful in philanthropic work, being a member of the board of managers of the Charity Organization Society. The Charity Organization Society receives from Dr. Shippen a legacy of $5000.

AT the meeting of the Laennec Society on November 23 Dr. S. A. Knopf of New York made an address on "Tuberculosis as a Social Disease," and Dr. J. P. C. Foster of New Haven made an address on "The State in Its Relation to Tuberculosis." These papers were discussed by Dr. John S. Fulton, Dr. Wm. H. Welch and State Senator Chas. H. Linthicum. Dr. Owensby of the Bayview staff read a paper on the statistics of tuberculosis among the inmates of Bayview.

ON November 15 Dr. John C. Hemmeter, professor of physiology in the University of Maryland, was honored with the gift of an oil portrait of himself painted by Dieterich and presented by his professional friends and pupils in commemoration of the twentieth anniversary of his doctorate. The celebration was held at Dr. Hemmeter's home, on Linden avenue. The presentation was made by Surgeon-General Walter Wyman of the United States Public Health and Marine Hospital Service. An address of felicitation was made also by Dr. Warner Holt of Washington, D. C. The subscribers were 95 in number.

ON Sunday afternoon, November 19, a special service for physicians, medical students and nurses was held at Grace Episcopal Church, Baltimore. The rector, Rev. Arthur Chilton Powell, said that the precedent for this special service is found in the annual St. Luke's day service at St. Paul's in London. Bishop Whitehead of Pittsburg preached the sermon on the healing of the young man possessed of a dumb spirit, his text being from the 27th verse of the 9th chapter of St. Mark's Gospel: "But Jesus took him by the hand and lifted him up; and he arose." After the sermon Dr. Howard A. Kelly made an address on the spiritual privileges and responsibilities of the practicing physician. The attendance was large, though the weather was quite unfavorable. The offertory was for the benefit of the Maryland Hospital for Consumptives.

MARYLAND.

DIPHTHERIA has been prevalent in the past few weeks at Upper Fairmount, Somerset county.

DR. GORDON T. ATKINSON of Crisfield, Md., was re-elected Comptroller of the Treasury of Maryland at the election on November 7.

DR. JOSEPH VEAZEY WALLACE of Chesapeake City, Md., died on November 16, aged 76. Dr. Wallace graduated at the University of Mary-

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land in 1853. He was a member of the Medical and Chirurgical Faculty, and an ex-president of the Cecil County Medical Society.

THE State Board of Health of Massachusetts will hold a tuberculosis exhibit in Faneuil Hall, Boston, during 10 days from December 28.

THE Western Maryland Hospital of Cumberland will shortly be relieved of debt. With $2000 appropriated by the State and an equal amount raised by private subscription, the incumbrance will be cleared off.

AMONG the newly-elected senators is Dr. W. Winder Goldsborough of Ridgely, Caroline county. Dr. Goldsborough was a member of the last house of delegates, and earned the good-will of medical men who had business at Annapolis.

DR. RICHARD S. HILL of Prince George county will probably be the speaker of the house of delegates at the coming session of the legislature. Dr. Hill made an excellent record at the last session, and his election to the speakership will be pleasing to the medical profession of Maryland.

DR. MILTON W. WARFIELD died at his home, near Lisbon, Howard county, on November 26, aged 78 years. Dr. Warfield was graduated at Jefferson Medical College, Philadelphia, in 1850, and practiced medicine for more than half a century in the neighborhood in his native county.

THE Washington County Medical Society has elected the following officers for the coming year: President, Dr. L. H. Keller of Hagerstown; vice-president, Dr. W. S. Richardson of Williamsport; secretary, Dr. Victor D. Miller, Hagerstown; treasurer, Dr. Hamilton K. Derr of Hagerstown; censor, Dr. D. C. R. Miller of Mason and Dixon.

GENERAL.

THERE is an excellent prospect of amalgamation between the Medical College of Virginia and the University of Virginia.

THE Health Department of New York has been sued for $50,000 damages by the father of a child who died after an injection of a prophylactic dose of diphtheria antitoxin.

IT is reported that the *Medical News* of New York has been purchased by the *New York Medical Journal*. The passing of the *Medical News* will be regretted.

CHILE furnishes a modern instance of the ancient horrors of epidemic smallpox. In Valparaiso there are said to have been 11,000 cases since January, 1905, and more than 5000 deaths.

THE Superior Board of Health of Mexico announces that during this year there have been but 70 cases of yellow fever in the republic, and that at present the disease is wholly absent.

THE Health Department of Pennsylvania has established 500 depots in various parts of the State to distribute free antitoxin for the use of physicians in the treatment of diphtheria in patients unable to pay for the remedy.

DR. GEORGE M. GOULD, 1722 Walnut street, Philadelphia, will be grateful for any trustworthy information as to the methods which have been devised by the blind in overcoming their disability or in gaining a livelihood. Accounts of such lives, anecdotes, references to literature, etc., will be appreciated.

DR. WM. OSLER was one of the speakers at the tercentenary memorial celebration of the birth of Sir Thomas Browne at Norwich on October 16. A portrait statue was unveiled. Dr. Osler also lectured to the Pupils' Physical Society of Guy's Hospital, London, on the "Life and Works of Sir Thomas Browne."

A TUBERCULOSIS exhibition was opened at the Museum of Natural History in New York on Monday, November 27, under the auspices of the National Association for the Study and Prevention of Tuberculosis and the Committee on the Prevention of Tuberculosis of the Charity Organization Society. The exhibition will continue for two weeks. It is said to be a very complete and interesting show. Several Baltimore physicians attended.

THE Cuban Board of Health has at present in hand the only serious outbreak of yellow fever which has occurred in the island since the American intervention. The disease is believed to have been brought from New Orleans in some goods consigned to the Payaret Theater. When these packages were opened the escape of some mosquitoes was noticed, but danger from these mosquitoes was not apprehended. A singer was the first victim and another employe of the theater was the second.

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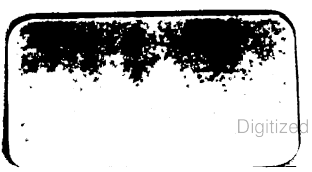

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